



Monthly Labor Review

U.S. Department of Labor
Bureau of Labor Statistics
May 1993

In this issue:

- Spending by older consumers
- Cost of employee compensation
- Productivity in utility services
- Wage changes in contracts





U.S. Department of Labor
Robert B. Reich, *Secretary*

Bureau of Labor Statistics

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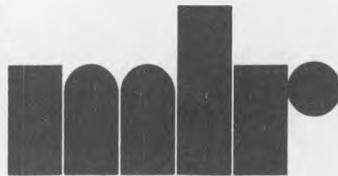
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Monthly Labor Review

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Robert W. Fisher, *Executive Editor*

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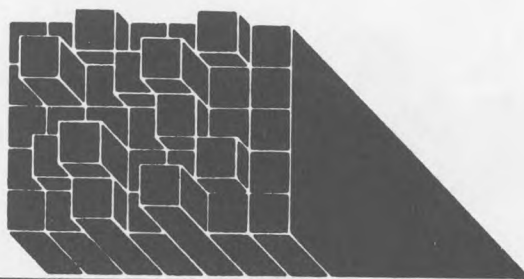
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KLEIN AWARD. The Lawrence R. Klein Award trustees selected the authors of two articles published in the *Monthly Labor Review* in 1992 as winners of the 24th annual Klein Award. The award will be presented at the Bureau of Labor Statistics awards ceremony on June 8.

This year, the trustees honored these authors:

- Joseph R. Meisenheimer II, formerly of the Bureau's Office of Employment and Unemployment Statistics, for "How do immigrants fare in the U.S. labor market?" which appeared in the December issue; and
- Murray Gendell and Jacob S. Siegel, for "Trends in retirement age by sex, 1950-2000," in the July issue, which took the award for best 1992 *Monthly Labor Review* article by an author outside BLS.

Receiving special commendation were BLS economist Martin Personick for developing what has become a continuing series of articles providing profiles in safety and health in various industries. The staff of the BLS Office of Employment Projections were similarly commended for publication of their ongoing evaluations of the accuracy of their projections.

The **Meisenheimer** article compares the labor market status of immigrants with that of U.S. natives, using data from a special supplement to the November 1989 Current Population Survey. The survey showed, for example, that the unemployment rate for immigrants was somewhat higher than the rate for native-born workers, and that the weekly earnings of immigrants who worked full time were significantly lower than those of natives. The study pointed to differences in educational attainment as a major reason for these disparities. Other factors affecting the labor market status of immi-

grants included the length of time they had lived in the United States and their fluency in English, strong indicators of the degree to which immigrants had been assimilated into U.S. socioeconomic life.

Gendell and Siegel use Social Security and Current Population Survey data to track trends in retirement age by sex from 1950 to 1990, and to project those trends through the year 2005. Results of the study indicate that age at final retirement has fallen by between 4 and 5 years for both men and women since mid-century. Moreover, the authors project continued declines for the 1990's, accelerating for the period 2000-05. According to the authors, the magnitude and pace of the postwar decline were similar for men and women, including a marked deceleration that took place during the 1970's.

Gendell and Siegel cite the importance of their estimates for future socioeconomic developments. A decline in the average age at retirement, as well as a general gain in longevity of the population, tends to raise the economic dependency burden placed by the elderly on younger cohorts still in the labor force. This, in turn, tends to make increases in per capita income harder to achieve, even as the costs of income transfers to the elderly rise. Given these factors, the issues of the desirability and feasibility of reversing the decline in retirement age are sharpened. Despite recurrent forecasts over the years of a reversal, the authors maintain that it has not happened yet. Nor does it appear likely to do so for another decade.

Personick's special commendation is in appreciation of his continuing effort to apprise the public of job safety and health issues as they relate to industry of the affected worker, type of injury,

and other factors. The series of articles, written by Personick and staff of the Division of Safety and Health Statistics, also addresses the changing composition of the economy, focusing not only on manufacturing industries, but also on the increasingly important services industries, such as retail grocery stores and nursing homes.

Projections of alternative scenarios of economic growth are prepared biennially by the Bureau's Office of Employment Projections. A vital part of the projections process is evaluation of the accuracy of earlier projections to determine how the process can be improved. Members of the Office's staff produce articles comparing their projections with actual historical data covering the projected years. This final stage of the projections process allows the Bureau to identify strengths and weaknesses as it continues to improve and refine its projections.

About the award. Trustees of the Klein Award Fund are Lawrence R. Klein; Howard Rosen, president; Ben Burdetsky, secretary-treasurer; Peter Henle; Harold Goldstein; Henry Lowenstern; Jerome Mark; and Deborah Klein. The award was established in 1968 in honor of Lawrence R. Klein, editor-in-chief of the *Monthly Labor Review* for 22 years until his retirement in 1969. The purpose of the award is to encourage *Review* articles that (1) exhibit originality of ideas or method of analysis, (2) adhere to the principle of scientific inquiry, and (3) are well written. Each winning article carries a cash prize.

Tax deductible contributions to the fund may be sent to Ben Burdetsky, Secretary-Treasurer, Lawrence R. Klein Fund, c/o School of Government and Business Administration, The George Washington University, Washington DC 20052. □

Spending by older consumers: 1980 and 1990 compared

Estimates of expenditure and income suggest that today's older Americans have higher preretirement and pension earnings than their 1980 counterparts; this is especially true of those aged 65 to 74

Pamela B. Hitschler

As the century draws to an end, more attention is being focused on the aging of the Nation's population. Persons aged 65 years and older will comprise more than 14 percent of the U.S. population by 2010, and 22 percent by 2030.¹ (See table 1.) Today, 1 in 8 consumer units has a household head aged 65 or older.² With such a large demographic shift, spending patterns in the economy will change. Over the last 10 years, the population aged 65 and older has grown by 22 percent, compared with 9 percent for those under age 65.³ Among persons 65 and older, the rate of population increase rises with age. During the 1980's, the population aged 65 to 74 grew by 16 percent, while the numbers of persons aged 75 and older rose 31 percent.⁴ The economic consequences of an aging population are being studied closely by economists, sociologists, and policymakers.

An earlier article in the *Review*, which examined the expenditures of older persons using 1984 data from the Bureau of Labor Statistics Consumer Expenditure Survey, reported distinct differences in spending patterns between persons aged 65 to 74 and those aged 75 and older.⁵ In particular, differences were found in expenditures for housing, transportation, and health care. Differences also were found in income. This article updates estimates of expenditures and income for the same

two age groups. Consumer units (or "households")⁶ whose reference person (or "household head") is aged 65 to 74 are referred to as the "younger group," while those with reference persons aged 75 and older are termed the "older group."

Tables 2 and 3 summarize the differences in characteristics and spending patterns of the two major subgroups of older Americans between 1980 and 1990. For both groups, the largest expenditures in both years were for housing, followed by food and transportation. (Unless otherwise indicated, all expenditure and income estimates presented in this article are in current dollars.) However, the younger group had higher total expenditures and income than the older group in both 1980 and 1990. Consumer units in the younger group spent, on average, a significantly larger amount on every major expenditure category except housing and health care in both years. They did not spend much more on housing than the older group in 1980, but did in 1990. However, they did spend less on health care. In addition, other important changes occurred in measures for transportation, Social Security and pensions, entertainment, and travel.

Expenditure trends

Housing. Older consumer units benefited from the post-World War II building boom,

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Table 1. The older population as a share of the total U.S. population, 1900–1990, and projected to 2050

[In thousands]

Year	Total	65 to 74 years		75 years and older	
		Number	Percent	Number	Percent
1900.....	75,995	2,187	2.9	894	1.2
1950.....	150,697	8,415	5.6	3,854	2.5
1970.....	203,302	12,447	6.1	7,533	3.7
1980.....	226,546	15,581	6.9	9,969	4.4
1990.....	248,710	18,045	7.3	13,033	5.2
2000.....	268,266	18,243	6.8	16,639	6.2
2010.....	282,575	21,039	7.4	18,323	6.5
2020.....	294,364	30,973	10.5	21,094	7.2
2030.....	300,629	35,988	12.0	29,616	9.8
2040.....	301,807	30,808	10.2	37,301	12.4
2050.....	299,849	31,590	10.5	36,942	12.4

SOURCE: Cynthia Taeuber, *Sixty-Five Plus in America, Current Population Reports, Special Studies P23-178* (Bureau of the Census, 1992). Data for 1900 to 1990 are April 1 census figures. Data from 2000 to 2050 are projections to July 1 of each year. Projections are based on middle (moderate) fertility, mortality, and immigration assumptions.

during which demand was high, mortgages were obtainable at low interest rates, and tax incentives and other Federal policies designed to promote homeownership were in effect. During the 1960's and 1970's, the highest rate of increase in homeownership was among the group aged 45 through 64.⁷ Mortgage interest rates hovered around 6 percent through the mid-1960's, remained below 9 percent until the late 1970's, and then rose sharply, reaching a high of 15 percent in 1982.⁸ The low interest rates and home prices of the 1960's and 1970's are reflected in the currently large number of homeowners aged 65 and older who have paid off their mortgages (81 percent).

In the last 10 years, the homeownership rate has continued to increase among both the older and younger groups. It rose from 76 percent in 1980 to 82 percent in 1990 for the younger group, and from 66 percent to 72 percent for older households. As homeownership increased, so did the proportion of those homeowners aged 65 to 74 with mortgages—18 percent in 1980, compared with 27 percent in 1990. The proportion of those aged 75 and older with a mortgage was unchanged, at 8 percent, between 1980 and 1990. Consistent with higher rates of homeownership and higher interest rates are higher mortgage interest expenditures. The younger group spent 4 times more on mortgage interest in 1990 than they did in 1980, and the older group spent twice as much

as in the earlier year. Even though mortgage interest payments have increased dramatically, particularly for the younger group, they are still a small proportion of the *average* total housing budget because of the large number of older consumer units who own homes without mortgages. Utilities (30 percent), property taxes (13 percent), and maintenance, repairs, and insurance (11 percent) still consume the bulk of their housing budgets.

Another component of housing expenditures that grew substantially among the two groups is "other lodging." The younger group's expenditures on other lodging more than tripled since 1980; the older group's more than doubled. Other lodging includes two major components: owned second homes and out-of-town lodging, such as costs for hotels, motels, cottages, and so forth. Most of this increase is included in "lodging while out of town," the largest component of other lodging, which will be discussed below under travel.

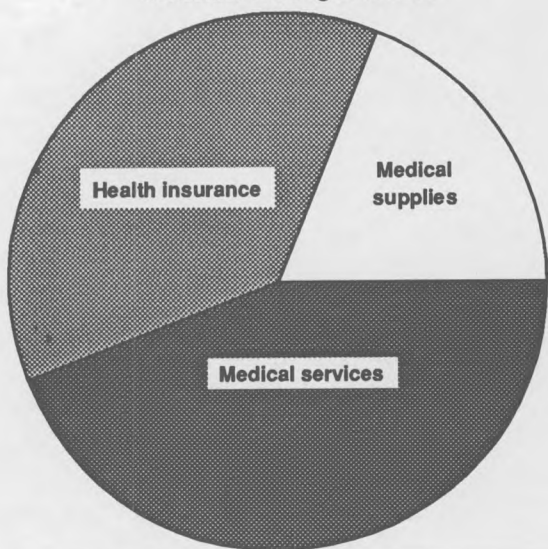
Health care. More of the total budget of those aged 65 and older now is consumed by out-of-pocket health care expenditures than was the case in the early 1980's. As health care costs rise, older persons are paying higher health plan premiums, deductibles, and copayments, and more older persons are buying commercial supplements to medicare, which is causing a shift in health expenditure shares from medical services to health insurance for both age groups. Table 4 shows detailed out-of-pocket health care expenditures and shares for older households in 1980 and 1990.

During the 1980's, out-of-pocket medical service expenditures increased 67 percent for the younger group and 4 percent for the older group, and the medical services component of the Consumer Price index for All Urban Consumers rose more than 115 percent.⁹ However, while both the level of expenditures and the Consumer Price Index increased, the share of medical service expenditures in the total health care budget dropped from 44 percent in 1980 to 31 percent in 1990 for those consumer units with heads aged 65 to 74, and from 57 percent to 32 percent for those in the older group. (See chart 1.)

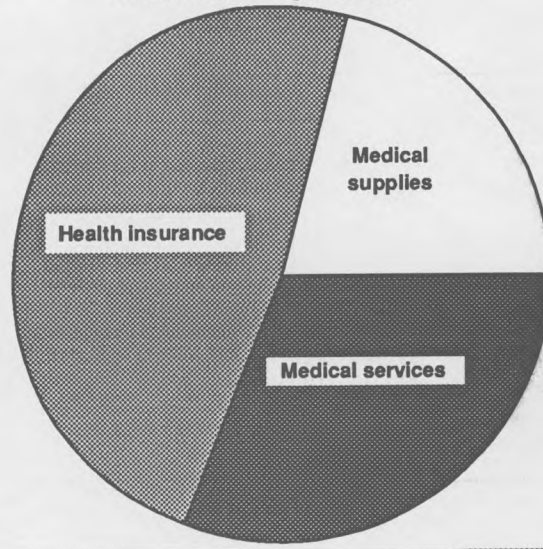
Contributing to trends in medical costs were the large increases over the last decade in medicare deductibles and copayments required for hospital stays of more than 60 days. Medicare inpatient hospital deductibles—the

Chart 1. Distribution of medical expenditures by consumer units aged 65 to 74 and aged 75 and older, 1980 and 1990

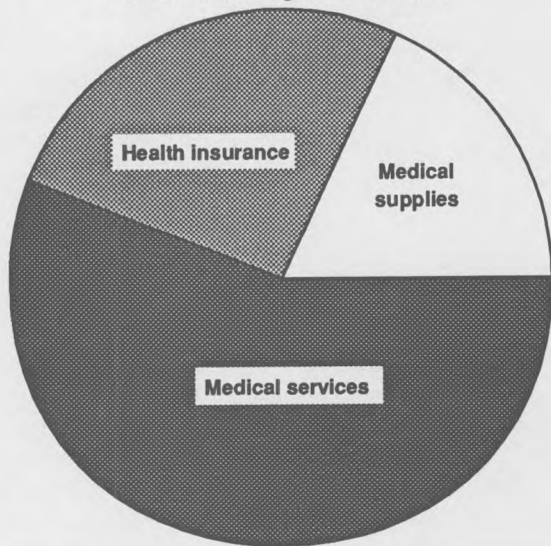
1980 average health expenditure shares, consumer units aged 65 to 74



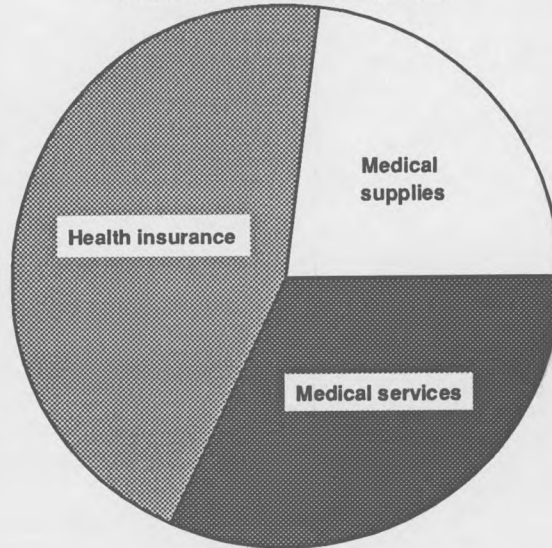
1990 average health expenditure shares, consumer units aged 65 to 74



1980 average health expenditure shares, consumer units aged 75 and older



1990 average health expenditures, consumer units aged 75 and older



share of expenses that must be paid by the patient before medicare payments kick in—rose from \$180 in 1980 to \$560 in 1990. Copayments are the share of hospital costs that must be born by the insured after the insurance program has begun to pay its share. These copayments for the 61st through the 90th days rose from \$45 in 1980 to \$148 in 1990; copayments after 90 days tripled as well.¹⁰

The seeming inconsistency of a large increase in price and a relatively small increase

in out-of-pocket medical service expenditures is partially explained by the tripling of health insurance expenditures by consumers: the increase in medicare deductibles and copayments, and the general rise in cost for medical services have served as an impetus to acquire more comprehensive health insurance coverage to supplement medicare. Having more health insurance, covering a wider range of health care needs, reduces out-of-pocket medical service expenditures. Health insurance as a

Table 2. Average total expenditures and t-statistics by age, Consumer Expenditure Interview Survey, 1980

Item	Age				t-statistic
	Under 65	65 and older			
		Total	65 to 74	75 and older	65 to 74 vs. 75 and older
Total consumer units (in thousands)	65,023	17,029	10,751	6,278	—
Consumer unit characteristics:					
Income before taxes	\$20,386	\$9,615	\$10,150	\$8,629	—
Average number of persons.....	3.0	1.8	1.9	1.6	—
Average age of reference person ..	40.0	73.3	69.3	80.3	—
Average number in consumer unit:					
Earners	1.7	.4	.5	.3	—
Vehicles	2.2	1.2	1.4	.8	—
Resident children under 18	1.0	0	.1	0	—
Persons aged 65 and older	0	1.4	1.3	1.4	—
Percent homeowners:					
With mortgage	44	10	13	5	—
Without mortgage	18	63	63	61	—
Percent renters	38	28	24	34	—
At least one vehicle owned (percent)					
	88	70	79	55	—
Total expenditures	\$17,779	\$10,095	\$10,744	\$8,984	*2.31
Food, total	3,364	2,168	2,363	1,835	*6.13
Food at home	2,540	1,745	1,881	1,511	*5.10
Food away from home	824	424	482	323	*3.88
Alcoholic beverages	302	112	125	89	*2.33
Housing, total	5,002	3,269	3,221	3,351	-.63
Shelter	2,792	1,530	1,564	1,471	.66
Owned dwellings	1,673	889	982	729	*2.40
Mortgage interest	974	102	132	51	*2.99
Property taxes	317	328	347	296	1.26
Maintenance, repairs, and insurance	382	458	503	382	1.60
Rented dwellings	863	498	421	629	*-3.93
Other lodging	257	143	161	113	1.83
Utilities	1,228	990	1,049	888	*5.15
Household operations	222	375	157	748	*-5.96
Housefurnishings and equipment	760	374	451	244	*5.18
Apparel and services	970	375	450	246	*6.70
Transportation	3,876	1,626	1,972	1,035	*4.75
Health, total	658	992	899	1,152	*-3.35
Medical services	364	487	393	647	*-4.01
Health insurance	200	320	333	298	1.52
Prescription drugs, medical supplies	95	186	173	207	*-1.97
Entertainment	808	262	322	158	*4.80
Personal care	149	127	140	107	*3.63
Reading	115	82	89	71	*2.76
Education	233	23	27	15	.82
Tobacco and smoking supplies	197	93	111	63	*4.75
Miscellaneous	272	168	191	129	1.52
Cash contributions	437	532	502	584	-.37
Pensions, retirement, and so forth	1,108	141	182	72	*4.48
Life and other insurance	287	124	150	81	*4.46

NOTE: Asterisk denotes significance at the 95-percent confidence level.

share of total health expenditures expanded from 37 percent in 1980 to 48 percent in 1990 for the younger group, and from 26 percent to 45 percent for the older group.

While increased expenditures for health insurance premiums are seen for all age groups in the population over the 1980-90 period,

they are most dramatic for those over 65. In large part, the greater expenditures indicate an increase in participation in commercial health insurance plans. The proportion of households aged 65 to 74 reporting expenditures for commercial supplements to medicare doubled, from 12 percent in 1980 to 23 percent in

Table 3. Average total expenditures and t-statistics by age, Consumer Expenditure Interview Survey, 1990

Item	Age				t-statistic
	Under 65	65 and older			
		Total	65 to 74	75 and older	65 to 74 vs. 75 and older
Total consumer units (in thousands)	76,889	20,079	11,318	8,761	—
Consumer unit characteristics:					
Income before taxes	\$35,433	\$18,842	\$21,501	\$15,435	—
Average number of persons	2.8	1.7	1.9	1.6	—
Average age of reference person	40.1	74.2	69.2	80.7	—
Average number in consumer unit:					
Earners	1.6	.4	.6	.2	—
Vehicles	2.1	1.5	1.8	1.0	—
Resident children under 18 .....	.9	.1	.1	0	—
Persons aged 65 and older	0	1.4	1.4	1.3	—
Percent homeowners:					
With mortgage	45	15	22	6	—
Without mortgage	14	63	60	66	—
Percent renters	42	22	18	27	—
At least one vehicle owned (percent)	89	78	87	67	—
Total expenditures	\$29,442	\$18,072	\$20,386	\$15,082	*6.24
Food, total	4,636	3,236	3,717	2,613	*7.93
Food at home	3,353	2,494	2,827	2,064	*7.93
Food away from home	1,284	741	890	549	*4.46
Alcoholic beverages	290	113	143	73	*4.37
Housing, total	9,029	5,752	6,174	5,208	*3.08
Shelter	5,529	3,128	3,339	2,857	1.87
Owned dwellings	3,234	1,880	2,081	1,619	*2.33
Mortgage interest	2,195	367	568	107	*7.64
Property taxes	555	760	824	677	1.76
Maintenance, repairs, and insurance	484	753	689	835	-.89
Rented dwellings	1,715	839	734	974	*-2.38
Other lodging	581	410	524	264	*3.32
Utilities	1,941	1,697	1,838	1,515	*5.32
Household operations	460	393	342	460	-1.28
Housefurnishings and equipment	1,099	533	654	377	*3.99
Apparel and services	1,499	615	755	434	*6.06
Transportation	5,625	2,863	3,444	2,113	*4.36
Health, total	1,204	2,109	2,102	2,118	-.12
Medical services	535	664	656	674	-.17
Health insurance	475	990	1,014	960	.95
Prescription drugs, medical supplies	194	456	432	485	-1.98
Entertainment	1,512	664	874	393	*7.37
Personal care	248	228	260	187	*4.53
Reading	157	137	156	112	*4.46
Education	465	45	36	57	-.55
Tobacco and smoking supplies	302	156	207	90	*6.02
Miscellaneous	630	411	510	283	*1.99
Cash contributions	761	1,026	937	1,141	.89
Pensions, retirement, and so forth	2,712	468	730	130	*6.60
Life and other insurance	370	249	341	131	*5.00

NOTE: Asterisk denotes significance at the 95-percent confidence level.

1990¹¹; a similar rise is seen for the older group as well. Another reason why health insurance accounts for a growing portion of the health care budget involves rising premiums for the Government's Medicare Supplementary Medical Insurance for medicare participants: monthly premiums for this insurance tripled

over the decade, from \$9.60 per individual in 1980 to \$28.60 in 1990.

Transportation. While the share of expenditures accounted for by transportation did not change significantly over the 1980's, more older consumer units owned an automobile in

Spending by Older Consumers

1990 than in 1980. The percentage of consumer units who owned an automobile increased from 79 percent in 1980 to 87 percent in 1990 for the younger group, and from 55 percent to 67 percent for older households. As a consequence, the share of the transportation budget devoted to vehicle finance charges and insurance increased significantly. The share attributable to gasoline expenditures declined substantially, in part due to falling oil prices, while the level of such expenditures remained virtually unchanged. In 1980, oil prices were high after the 1979-80 oil shock, but in 1982, the price of gasoline began to decline as the oil supply situation eased. It was not until 1990 that the price of gasoline reached a level above that of 1980. As measured by the Consumer Price Index for All Urban Consumers, the price of gasoline rose 24 percent from 1980 to 1990.

Retirement, pensions, and Social Security.

Shares of total expenditures for retirement funds changed significantly for the younger group over the 1980-90 period. (See table 5.) Social Security taxes, the largest component of retirement expenditures, more than tripled for the younger households, rising from \$148.83 in 1980 to \$463.15 in 1990. (Because the older group has fewer earners, they are less affected by changes in Social Security tax rates.) The Social Security tax on wage and salary workers rose from 6.1 percent in 1980 to 7.7 percent in 1990, and that for self-employed persons, from 8 percent to over 15 percent. At the same time, the earnings base to which the Social Security tax is applied was raised from \$25,900 to \$51,300. Of course, while some of the increase in retirement expenditures is accounted for by changes in Social Security regulations, another contributing factor is higher earnings, which will be discussed in the section below on income.

Table 4. Health expenditures by age group from the Consumer Expenditure Interview Survey, 1980 and 1990

Expenditure type	1980			1990		
	65 and older			65 and older		
	Total	65 to 74	75 and older	Total	65 to 74	75 and older
Total health care expenditures	\$992	\$899	\$1,152	\$2,109	\$2,102	\$2,118
Medical services	487	393	647	663	656	674
Physician services	152	149	158	227	232	220
Nonphysician services	335	245	489	437	424	454
Prescription drugs ¹	146	138	161	395	372	424
Health insurance, total	320	333	298	990	1,014	960
Health maintenance organizations, Blue Cross/Blue Shield	93	99	83	284	269	303
Commercial health insurance	77	82	69	164	185	137
Medicare payments	113	113	114	348	349	345
Commercial supplements to medicare, other health insurance	37	40	32	194	210	174
Medical supplies	39	35	46	61	60	61
Percent of health budget:						
Medical services	49.0	43.7	56.2	31.4	31.2	31.8
Physician services	15.3	16.5	13.7	10.8	11.0	10.4
Nonphysician services	33.7	27.3	42.5	20.6	20.1	21.4
Prescription drugs ¹	14.8	15.4	14.0	18.7	17.6	20.0
Health, insurance, total	32.3	37.0	25.9	46.9	48.1	45.3
Health maintenance organizations, Blue Cross/Blue Shield	9.4	11.0	7.3	13.5	12.8	14.3
Commercial health insurance	7.8	9.1	6.0	7.8	8.8	6.5
Medicare payments	11.4	12.6	9.9	16.5	16.6	16.3
Commercial supplements to medicare, other health insurance	3.7	4.4	2.8	9.2	10.0	8.2
Medical supplies	3.9	3.9	4.0	2.9	2.9	2.9

¹Includes prescription drugs and nonprescription drugs.
NOTE: Asterisk denotes significance at the 95-percent confidence level.

The second largest component of pensions and Social Security comprises IRA's and Keogh fund contributions, reflecting the ready availability of the plans and the tax advantages of IRA's, which were introduced into the tax code in 1981. Expenditures for tax-deferred saving plans increased from an average of \$14 in 1980 to \$211 in 1990 for households aged 65 to 74. The percent of consumer units in this age group reporting IRA and Keogh fund expenditures rose from 3 percent to 12 percent over the same period.

Entertainment. Both the younger and older groups spent significantly larger shares of total expenditures on entertainment in 1990 than they did in 1980. (See table 4.) While some of

this change is due to an increase in fees and costs of admission, and part reflects greater TV, radio, and sound equipment expenditures. (See table 6.) Spending on TV, radio, and sound equipment more than tripled for the younger group, and more than doubled for older households. Over the same period, the percent of consumer units reporting TV, radio, and sound equipment expenditures grew from 30 to 61 percent for the younger group, and from 24 to 43 percent for older households. A large part of this increase is accounted for by growth in cable TV expenditures. The average annual outlay for cable TV increased from \$19.59 to \$148.10 for the younger group, and from \$18.41 to \$90.56 for the older group. Three times as many of the younger households and

Table 5. Itemized expenditure shares for the older population, by age group, from the Consumer Expenditure Interview Survey, 1980 and 1990

Share of total expenditures by item	Age group 65 to 74		t-share, 1990 versus 1980	Age group 75 and over		t-share, 1990 versus 1980
	1980	1990		1980	1990	
Food at home.....	17.5	13.9	*-4.09	16.8	13.7	*-2.10
Food away from home.....	4.5	4.4	-.29	3.6	3.6	.08
Housing.....	30.0	30.0	.18	37.3	34.5	-.83
Apparel and services.....	4.2	3.7	-1.41	2.7	2.9	.37
Transportation.....	18.4	17.0	-1.02	11.5	14.0	1.10
Health care.....	8.4	10.0	*3.06	12.8	14.0	.87
Entertainment.....	3.0	4.3	*3.30	1.8	2.6	*2.34
Reading.....	.8	.8	-.88	.8	.7	-.52
Social Security contribution,pensions	1.7	3.6	*3.94	.8	.9	.32
Life insurance.....	1.4	1.7	1.22	.9	.9	-.19
Other.....	10.2	10.3	.49	11.0	12.2	1.81

NOTE: Asterisk denotes significance at the 95-percent confidence level.

Table 6. Entertainment and travel expenditures for the older population, by age, Consumer Expenditure Survey, 1980 and 1990

Item	1980, Persons aged—		1990, Persons aged—	
	65 to 74	75 and older	65 to 74	75 and older
Entertainment, total.....	\$340	\$168	\$874	\$393
Fees and admissions.....	130	57	330	153
TV's, radios, and sound equipment.....	116	75	316	160
Other entertainment ¹	94	36	229	79
Travel, total.....	417	235	854	435
Food on trips.....	114	58	245	120
Lodging on trips.....	89	62	253	131
Transportation on trips.....	214	115	356	202
Gasoline.....	93	34	100	42
Airfare.....	78	61	175	107
Intercity bus fare.....	14	5	19	15
Other.....	29	15	52	38

¹Includes pets, toys, playgrounds, boats, and photographic equipment and supplies.

Table 7. Income of older households from the Consumer Expenditure Interview Survey, 1980 and 1990

Type of income	1980, Persons aged—			1990, Persons aged—		
	65 and older	65 to 74	75 and older	65 and older	65 to 74	75 and older
Income before taxes.....	\$9,615	\$10,150	\$ 8,629	\$18,842	\$21,501	\$15,465
Type of income:						
Wages and salaries.....	1,812	2,317	880	3,552	5,439	1,133
Self-employment income.....	469	586	253	640	973	215
Social Security, railroad retirement income	4,115	4,180	3,996	8,296	8,216	8,398
Pensions and annuities.....	1,341	1,482	1,080	3,354	3,960	2,578
Interest and dividends.....	1,484	1,181	2,042	2,539	2,400	2,716
Other income.....	394	403	379	462	515	394
Percent of pretax income:						
Wages and salaries.....	18.8	22.8	10.2	18.9	25.3	7.3
Self-employment income.....	4.9	5.8	2.9	3.4	4.5	1.4
Social Security, railroad retirement income	42.8	41.2	46.3	44.0	38.2	54.3
Pensions and annuities.....	13.9	14.6	12.5	17.8	18.4	16.7
Interest and dividends.....	15.4	11.6	23.7	13.5	11.2	17.6
Other income.....	4.1	4.0	4.4	2.5	2.4	2.6

twice as many of the older ones reported this type of expenditure in 1990 than was the case in 1980. These increases follow a national trend reflecting the proliferation of home entertainment centers and other sources of home-based entertainment, and the rising cost of cable services.

Travel. Travel expenditures more than doubled between 1980 and 1990 for the younger group and for older households. In part, rising expenditures for both groups indicate that they are doing more traveling, at least in part because of cheaper airfares resulting from the deregulation of the airline industry, and cheaper gasoline. The components included in travel expenditures are food, lodging, transportation, and entertainment expenditures for out-of-town trips.¹² Table 6 shows the 1980 and 1990 travel expenditure levels and shares separately for the younger and older households. For both groups and in all categories (food, lodging, transportation, and entertainment), there were increased expenditures and greater numbers of consumer units reporting expenditures.

Food expenditures while on out-of-town trips increased at a slightly faster rate than did total trip expenditures for both groups. As a share of the total spent for food away from home, food on trips was up slightly for both

groups.¹³ Explaining much of this rise is the 5- to 6-percentage-point increase in the proportion of consumer units in both groups reporting such expenditures, the share of the younger growing from 26 percent to 31 percent, and that of the older, from 13 percent to 19 percent.

Lodging expenditures while out of town rose as well, although as a share of the total travel budget, they grew more for the younger group (21 percent in 1980 to 30 percent in 1990) than for older households (26 percent to 29 percent). These increases can be attributed to growth in the percent of consumer units in these age groups reporting lodging while out of town—an increase from 13 percent in 1980 to 18 percent in 1990 for the younger group, and from 6 to 10 percent for the older group.

Over the same period, transportation expenditures for travel rose 66 percent for the younger group and 76 percent for older consumer units. The subcomponents of transportation expenditures on trips include travel fares, vehicle rental, and gasoline purchases. As indicated earlier, travel by air was stimulated during the 1980's by special fares and inducements introduced by airlines following Federal deregulation of that industry in 1978. Average expenditures on airline fares rose 68 percent for all consumer units, with the age 65-to-74 group showing the largest increase—124 percent. The older group's airfare expenditures

were up 75 percent. Explaining much of this rise in average expenditure is the fact that more older people (those 65 and older) are traveling via airplane. Both the younger and older groups reported similar increases in percent reporting airline expenditures. In 1980, 5 percent of the younger group and 4 percent of the older group reported such expenditures, but by 1990, these figures were 8 percent and 5 percent, respectively.

Over the same period, the level of gasoline expenditures on trips remained about the same, in part due to falling oil prices. The growth in the percent of consumer units reporting gasoline expenditures on trips is evidence of a general increase in travel by car. Over the period 1980-90, the percent of households reporting gasoline expenditures for trips increased 2 percentage points for both the younger and older groups (27 percent to 29 percent for the former, and 14 percent to 16 percent for the latter).

Income

Changes in expenditures often reflect changes in income. The average income for households with reference persons aged 65 or older doubled during the 1980's. But this figure masks the diversity of income patterns that exists within the older population. The heterogeneity of the group becomes particularly apparent when one looks at income sources, levels, shares, and poverty rates. The younger group's income rose faster, increasing 112 percent (in 1990 dollars), versus 79 percent for the older group. (See table 7.) In 1980, the younger group's average income was 18 percent higher than that of the older group, but by 1990, the younger group's income was 39 percent higher. The larger increase in income among the younger households is accounted for by the fact that their lifetime earnings and contributions to Social Security and government or private pensions are greater than those of their older counterparts.¹⁴

Social Security remained a less important source of income for the younger group than for the older group over the study period. As a proportion of total income, Social Security income decreased for the younger group (41 to 38 percent), and increased for the older group (46 to 54 percent) between 1980 and 1990. However, the current-dollar level of Social Security

income increased 96 percent for the younger group and 110 percent for older households, a substantial rise for both groups, and well above the 58-percent increase in the Consumer Price Index. And, more consumer units from each group reported receiving Social Security income: for the younger group, the percent reporting such income rose from 90 percent in 1980 to 94 percent in 1990, while that for older households was up from 93 percent to 97 percent. This increase could be accounted for by the long-term trend toward earlier retirement, which continued throughout the 1980's for men. Civilian labor force participation rates fell from 19 percent in 1980¹⁵ to 16 percent in 1990¹⁶ for men aged 65 and older.

Wages and salaries remain the second largest source of income for those aged 65 to 74. Wages and salaries more than doubled for the younger group over the 1980-90 timespan, while increasing almost one-third for the older group and a little over two-thirds for all other age groups. For the younger group of persons 65 and older, the proportion of income derived from wages and salaries rose from just under 23 percent in 1980 to slightly over 25 percent in 1990, while the corresponding ratio for the older group decreased from 10 percent to 7 percent. The changes can be accounted for by trends in the number of earners per consumer unit, specifically, an increase in the number of earners per household in the younger group, from 0.5 to 0.6, compared with a decrease of 0.3 to 0.2 earners for older households. Additionally, while civilian labor force participation rates fell for older men, those for older women actually rose. The rate of increase in labor force participation among women aged 65 to 74 could account for the rise in the average number of earners per consumer unit in the younger group.¹⁷

For the older group, a higher percentage of whom are retired, private pensions and annuities remain the second largest source of income. However, pensions and annuities were a more important source of income for both age groups in 1990 than in 1980. Such income rose 167 percent for the younger group and 139 percent for the older group over the study period. As a proportion of total income, pensions and annuities grew from 15 percent in 1980 to 18 percent in 1990 for the younger group, and from 13 percent to nearly 17 percent for older households. Explaining much of this pattern of rise is an

increase in the percent of consumer units reporting pensions and annuities: the percent doing so increased faster for the younger consumer units than for the older ones. The share of the younger group reporting such income grew from 35 percent in 1980 to 47 percent in 1990, while the corresponding measure for the older group rose from 29 percent to 40 percent. This phenomenon reflects the increased availability of private retirement funds and tax advantages of certain types of funds, from which the younger group have had more opportunity to benefit than have the older group.

Income from interest and dividends followed a pattern that differed from that of pensions and annuities. The level of income derived from interest and dividends doubled for the younger group, and increased by one-third for the older group over the period 1980-90. However, the share of total income derived from interest and dividends fell from 12 to 11 percent for the younger group and from 24 to 18 percent for older households. The percent of consumer units reporting such income also declined—from 47 to 45 percent for the younger group and from 45 to 43 percent for the older group.

As with income, there are large differences in poverty rates between the age groups. For those aged 65 and older, the poverty rate fell from 16 percent in 1980 to 11 percent in 1990. The following tabulation shows poverty rates of older persons in 1990 by age:¹⁸

Age	Percent in poverty	
	1980	1990
Under 65 years	12.3	13.0
65 years and older	15.4	12.2
65 to 74 years	13.1	9.7
75 years and older	20.1	16.0

The dramatic differences in poverty rates among the groups is partially accounted for by factors such as number and sex of earners in the household. Older groups are characterized by fewer earners and more women. Both men and women have longer life expectancies than they did in 1980, part of a long-term trend explained by improvements in medicine and technology. At 65 years, the average life expectancy was 16.4 years in 1980 and 17.2 years in 1990. But women still outlive men. At age 65, a woman's average life expectancy exceeds a man's by 4 years. Women over the age of 65, who grew up during an era in which fewer women worked outside the home, are less like-

ly to have access to pension and Social Security income in their own names. However, with the increase in the number of women who have entered the labor force over the last 20 years, it is more likely that women over 65 will be entitled to their own pension and Social Security income in the future.

THESE FINDINGS tend to support assertions of other analysts that we are seeing a "golden age of the golden years,"¹⁹ in that persons aged 65 years and older have higher expenditures and income than they did 10 years ago. Over the 1980's, the two older groups studied here more or less followed the same trends in terms of home and vehicle ownership and health, pension, and travel expenditures. The continuing availability of data from the Consumer Expenditure Survey will allow analysts to follow the economic activities of the growing cohorts of older persons in the future. □

Footnotes

¹ Gregory Spencer, *Projections of Population of U.S., by Sex, Age, and Race 1980 to 2080, Current Population Reports, Series P-25, No. 1018* (Bureau of the Census, January 1989).

² Cynthia Taeuber, *Sixty-five Plus in America, Current Population Reports, Special Studies P23-178* (Bureau of the Census, 1992).

³ *Ibid.*

⁴ *Ibid.* The population aged 75 to 84 grew by 30 percent. The cohort aged 80 and older grew by 33 percent.

⁵ Beth Harrison, "Spending patterns of older persons revealed in expenditure survey," *Monthly Labor Review*, October 1986, pp. 15-17.

⁶ A consumer unit is either (1) all members of a household who are related by blood, marriage, adoption, or other legal arrangements; (2) two or more persons living together who pool their income to make joint expenditure decisions; or (3) a person living alone or sharing a household with others, or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent. A person is considered financially independent if he or she provides the income for at least two of the three major living expenses—food, clothing, and shelter. The terms consumer unit and household are used interchangeably throughout this article.

⁷ Louise B. Russell, *The Baby Boom Generation and the Economy* (Washington, The Brookings Institution, 1982), p. 13.

⁸ *Economic Report of the President* (Government Printing Office, 1992), table B-69.

⁹ The health care component of expenditures was unusually large for households headed by persons 75 and older in 1980 due to a few large medical service expenditures. Average medical service expenditures for those 75 and older were \$487 in 1981 and \$447 in 1982. Therefore, medical services in 1980 were a larger portion of total expenditures than one might expect, but still a larger portion than health insurance. In 1981, total health care expenditures for those 75 and older was \$1,037; health insurance was \$388; 47

percent of total health care expenditures went to medical services, and 32 percent to health insurance.

¹⁰ *Social Security Bulletin, Annual Statistical Supplement, 1991.*

¹¹ These estimates are presented at a quarterly rate—that is, they are the percent of consumer units reporting this type of expenditure in a 3-month period.

¹² See Geoffrey Paulin, "Consumer expenditures on travel, 1980–87," *Monthly Labor Review*, June 1990, pp. 56–60, for more information on travel expenditures.

¹³ Food away from home includes meals at restaurants, board, catered affairs, school lunches, and meals as pay.

¹⁴ Michael Hurd, "The Economic Status of the Elderly," *Science*, vol. 244, 1989, p. 659.

¹⁵ *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, August 1989), pp. 25–27.

¹⁶ *Employment and Earnings*, January 1991, p. 164.

¹⁷ See Murray Gendell and Jacob S. Siegel, "Trends in retirement age by sex, 1950–2005," *Monthly Labor Review*,

July 1992, p. 22, for a more detailed discussion of these findings. Among other trends, Gendell and Siegel found that participation rates for men aged 65 to 69 fell from 28.5 percent in 1980 to 26 percent in 1990; those for women of comparable age rose from 15.1 percent to 17.0 percent. Among persons aged 70 to 74, men's rates dropped from 17.9 percent to 15.4 percent, while women of the same cohort increased participation rates from 7.5 percent to 15.4 percent. Men aged 75 and older decreased their participation rates from 8.8 to 7.1 percent, while their female counterparts increased theirs, from 2.5 to 2.7 percent.

¹⁸ Data are from the Bureau of the Census. See "Single Years of Age—Poverty Status in 1990," March 1991, table 23; and "Single Years of Age—All Persons and Related Children Under 18 by Low-Income Status," March 1981, table S–1. Unpublished data.

¹⁹ See Mark Weinstein, "The Changing Picture in Retiree Economics," *Statistical Bulletin* (Metropolitan Life Insurance), July–September 1988, p. 7.

A note on communications

The *Monthly Labor Review* welcomes communications that supplement, challenge, or expand on research published in its pages. To be considered for publication, communications should be factual and analytical, not polemical in tone. Communications should be addressed to the Editor-in-Chief, *Monthly Labor Review*, Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC 20212.

Cost of employee compensation in public and private sectors

Much of the variation in the cost of compensation in the two sectors is due to differences in the occupational mix and types of compensation packages provided

Bradley R. Braden
and
Stephanie L. Hyland

At first glance, compensation costs between State and local governments and private industry appear vastly different. In March 1992, employer costs for employee compensation (wages paid plus employer-provided benefits) averaged \$23.49 per hour worked in State and local governments and \$16.14 in private industry—a difference of almost 50 percent. (See table 1.) Such a comparison can be quite misleading, however, as was noted when these data were first released in June 1992.¹ In fact, the differences in the cost of compensation in the public and private sectors stem from a number of factors, particularly the large variation in the work activities and occupational structures of the two sectors.

For example, certain activities that are required in government, such as public education and safety, call for a large proportion of white-collar professionals and highly skilled service occupations. In contrast, certain industries such as manufacturing, wholesale trade, and retail trade, are unique to the private sector, and require occupations with comparatively lower compensation costs, such as sales. When certain industries common to both sectors are examined, such as health services, total compensation costs are similar.

About two-thirds of the overall gap in total compensation between public and private sectors was in the wage component; one-third

was in benefits. Straight-time wages and salaries were \$16.39 per hour worked in government, and \$11.58 in private industry; benefit costs averaged \$7.09 per hour worked in government and \$4.55 in private industry.

The difference in the costs of employer-paid benefits between government and private industry primarily reflects differences in the nature of compensation packages provided to employees in each sector. The availability and characteristics of benefits such as paid leave, retirement, and certain insurances vary considerably in the two sectors. For example, virtually all government employees were covered by a retirement plan, while fewer than two-thirds of the employees in the private sector had such coverage.

This article highlights differences in the industry and occupational mix that influence average compensation costs in private industry and State and local governments, and provides data on the hourly cost of compensation for specific groups of workers in each sector.² In addition, differences in the cost of benefits are examined, using data on the incidence and provisions of major benefits in the two sectors.

Compensation costs are based on data from the Bureau of Labor Statistics Employment Cost Index (ECI), which measures quarterly changes in employer costs for employee compensation.³ Data from the ECI are also used

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to produce measures of employer cost per hour worked for each component of compensation.⁴ Compensation costs, representing data for March of each year, were first published for State and local governments in 1991, while private industry data have been available since 1987.⁵

Data on the incidence and provisions of employee benefits are based on the BLS Employee Benefits Survey.⁶ The Employee Benefits Survey includes detailed information on the characteristics of employee benefits including paid leave, medical care plans, life and disability insurance, and retirement plans. With few exceptions, the Employee Benefits Survey is limited to benefits financed at least in part by employers.

Costs by industry activity

Much of the difference in average compensation costs between State and local governments and private industry can be explained by differences in the mix of industry activities in the two sectors. The activities that occur solely in one sector generally result in a higher average cost of compensation for government and a lower average cost for private industry.

For example, more than one-fourth of the government work force was engaged in public administration, which averaged \$20.76 in hourly compensation.⁷ (See table 2.) Among other activities, public administration includes protective services (police and fire protection), State and local legislative bodies, executive offices, administrative offices, and courts. The work force required to perform these activities includes a large proportion of white-collar and skilled service occupations that had comparatively high compensation costs.

In addition, government is the primary provider of educational services. More than half of all State and local government employees were engaged in educational activities, compared with 2 percent of private sector workers. The average cost of compensation was \$26.55 per hour worked for the mostly white-collar workers in government educational services.⁸

In contrast, compensation costs for many activities that take place only in the private sector, such as in manufacturing, wholesale trade, retail trade, and finance, insurance, and real estate, had compensation costs less than \$20 per hour. (See table 3.) Combined, these activities accounted for more than half of

Table 1. Employer costs per hour worked for employee compensation, State and local government and private industry, March 1992

Series	Private Industry		State and local governments	
	Cost	Percent	Cost	Percent
Total compensation	\$16.14	100.0	\$23.49	100.0
Wages and salaries	11.58	71.8	16.3	69.8
Total benefits	4.55	28.2	7.09	30.2
Paid leave	1.09	6.8	1.80	7.7
Vacations .....	.54	3.3	.60	2.6
Holidays .....	.37	2.3	.58	2.5
Sick leave .....	.14	.9	.47	2.0
Other leave .....	.05	.3	.15	.7
Supplemental pay .....	.39	2.4	.21	.9
Premium pay .....	.18	1.1	.10	.4
Shift pay .....	.05	.3	.04	.2
Nonproduction bonuses .....	.15	1.0	.07	.3
Insurance	1.12	6.9	1.84	7.8
Life .....	.05	.3	.05	.2
Health	1.02	6.3	1.75	7.4
Sickness and accident .....	.05	.3	.04	.2
Retirement and savings .....	.46	2.9	1.82	7.8
Pensions .....	.36	2.3	1.81	7.7
Savings and thrift .....	.10	.6	(¹)	(¹)
Legally required ²	1.47	9.1	1.40	6.0
Social Security .....	.96	6.0	1.07	4.6
Federal unemployment .....	.03	.2	(¹)	(¹)
State unemployment .....	.10	.6	.04	.1
Workers compensation .....	.36	2.2	.28	1.2
Other benefits ³ .....	.02	.1	.02	.1

¹Cost per hour worked is \$0.01 or less.

²Includes railroad retirement and supplemental railroad retirement, railroad unemployment insurance, and other legally required benefits in addition to those shown separately.

³Includes severance pay and supplemental unemployment benefits.

private industry employment. Retail trade activities, for example, employed more than one-fifth of the private sector work force, and averaged \$9.07 per hour in total compensation. Retail trade activities employed a large proportion of salesworkers and service workers, whose compensation is less than that of the largely white-collar workers in State and local governments.

Compensation costs were similar for industry activities common to government and the private sector. For example, construction, transportation and public utilities, and health services are found in both sectors. As shown in the following tabulation, government and private sector compensation costs were similar for these activities. Compensation costs for private sector transportation and public utilities workers were essentially identical to their government counterparts:

Table 2. Employer costs per hour worked for employee compensation by occupational and industry group, State and local government and private industry, March 1992

Series	Total compensation	Wages and salaries	Benefit costs						
			Total	Paid leave	Supplemental pay	Insurance	Retirement and savings	Legally required benefits	Other benefits ¹
State and local government.....	\$23.49	\$16.39	\$7.09	\$1.80	\$0.21	\$1.84	\$1.82	\$1.40	\$0.02
Occupational group:									
White-collar occupations.....	25.55	18.99	7.56	1.90	.14	1.96	2.03	1.50	.03
Professional specialty and technical ..	31.50	23.10	8.40	1.87	.16	2.14	2.48	1.71	.04
Teachers.....	34.42	25.74	8.68	1.65	.08	2.31	2.82	1.78	.04
Executive, administrative, and managerial.....	29.86	20.84	9.02	2.98	.14	1.81	2.31	1.76	.02
Administrative support including clerical	15.03	9.90	5.13	1.41	.09	1.68	.99	.95	(?)
Blue-collar occupations.....	18.06	11.69	6.38	1.67	.34	1.70	1.26	1.39	.02
Service occupations.....	16.52	10.54	5.99	1.53	.36	1.53	1.46	1.09	.02
Industry group:									
Services.....	24.92	17.85	7.06	1.68	.15	1.92	1.90	1.40	.03
Health services.....	18.42	12.45	5.98	1.90	.49	1.32	.98	1.27	.02
Hospitals.....	18.80	12.77	6.02	1.94	.48	1.31	.98	1.29	.02
Educational services.....	26.55	19.25	7.30	1.63	.09	2.04	2.09	1.43	.03
Elementary and secondary education.....	26.73	19.38	7.35	1.53	.08	2.14	2.16	1.41	.04
Higher education.....	26.95	19.59	7.36	1.91	.12	1.82	1.96	1.54	(?)
Public administration.....	20.76	13.69	7.07	2.03	.28	1.64	1.77	1.32	.02
Private Industry.....	16.14	11.58	4.55	1.09	.39	1.12	.46	1.47	.02
Occupational group:									
White-collar occupations.....	18.95	13.90	5.05	1.43	.37	1.23	.53	1.47	.02
Professional specialty and technical ..	25.20	18.45	6.75	2.03	.52	1.51	.73	1.93	.02
Executive, administrative, managerial	29.42	21.62	7.81	2.56	.60	1.59	.94	2.08	.03
Sales workers.....	13.26	10.24	3.03	.66	.23	.72	.27	1.14	(?)
Administrative support including clerical	13.69	9.74	3.95	1.01	.26	1.20	.38	1.09	(?)
Blue-collar occupations.....	15.88	10.74	5.13	.94	.56	1.29	.53	1.77	.04
Precision production, craft, and repair	20.30	13.86	6.44	1.26	.67	1.53	.73	2.21	.04
Machine operators, assemblers, and inspectors.....	14.98	9.79	5.19	.99	.68	1.46	.47	1.53	.07
Transportation and material moving... Handlers, equipment cleaners, helpers, and laborers	16.15	10.87	5.28	.92	.51	1.22	.57	2.04	.02
11.41	7.95	3.46	.54	.34	.87	.33	1.36	(?)	
Service occupations.....	8.43	6.38	2.05	.39	.12	.45	.14	.94	(?)
Industry group:									
Goods-producing industries ³	19.38	13.17	6.21	1.33	.64	1.60	.70	1.89	.05
Construction.....	18.91	13.34	5.56	.62	.50	1.10	.81	2.54	(?)
Manufacturing industries.....	19.20	12.93	6.26	1.47	.67	1.70	.65	1.71	.06
Durables.....	20.77	13.77	7.00	1.64	.79	1.95	.73	1.80	.09
Nondurables.....	17.10	11.82	5.28	1.24	.51	1.37	.56	1.58	.02
Service producing industries ⁴	14.99	11.02	3.97	1.01	.30	.95	.38	1.33	(?)
Transportation and public utilities.....	22.91	5.72	7.19	1.87	.50	1.81	.83	2.15	.03
Wholesale trade.....	17.67	12.70	4.97	1.15	.48	1.29	.44	1.59	.02
Retail trade.....	9.07	7.00	2.07	.38	.17	.44	.12	.95	(?)
Finance, insurance, and real estate ..	19.95	14.58	5.38	1.57	.31	1.48	.65	1.35	.02
Services.....	15.59	11.56	4.03	1.09	.30	.90	.38	1.35	(?)

¹Includes severance pay and supplemental unemployment benefits.

²Cost per hour worked is \$0.01 or less.

³Includes mining, construction, and manufacturing.

⁴Includes transportation, communications, and public utilities; wholesale and retail trade; finance, insurance, and real estate; and service industries.

	<u>Total compensation</u>	
	Private	Government
Construction	\$18.91	\$16.89
Transportation and public utilities	22.91	22.95
Health services	16.77	18.42

	<u>Percent of total employment</u>	
	Private	Government
Construction	5	3
Transportation and public utilities	7	5
Health services	10	8

The overwhelming concentration of public employment in educational services and public administration demonstrates the role of State and local governments as unique providers of particular services. These activities raised the average cost of compensation for State and local governments. Compensation costs were generally equivalent when certain activities common to government and private industry were examined.

Costs by occupation

The differences in the industry mix between the public and the private sectors also lead to differences in the occupational composition of their work forces. The following shows the mix of occupations and their costs of compensation in the two sectors.

	<u>Total compensation</u>	
	Private	Government
White collar	\$18.95	\$26.55
Blue collar	15.88	18.06
Service	8.43	16.52

	<u>Percent of workers</u>	
	Private	Government
White collar	51	68
Blue collar	32	12
Service	17	20

Government compensation costs were higher for each of the major occupational groups than costs in the private sector. Compensation for white-collar workers was 40 percent higher in government than in private industry, while the difference for blue-collar workers was 14 percent. The largest cost difference was for ser-

vice workers, who as a group had compensation costs that were 96 percent higher in government than in private industry.

The disparities in compensation costs between workers in the same broad occupations in the public and private sectors reflect the differences in the composition of jobs making up those broad occupational groups. Professional and technical employees represented more than half of the government white-collar work force, compared with less than one-fourth of the private sector work force. In contrast, more than one-fifth of the private sector white-collar employees were sales workers, a job seldom found in government. The following tabulation shows the percent of private and government workers in selected occupational groups:

	Private	Government
All white-collar occupations	100	100
Professional and technical	24	56
Executive, administrative and managerial	17	15
Sales	22	*
Administrative support including clerical.	37	28

*Less than 1 percent.

The difference in the cost of compensation for service occupations is due largely to the mix of service jobs. For example, police and firefighters accounted for 1 of 4 service workers in State and local governments, but were essentially nonexistent in the private sector. Because of the hazardous nature of such jobs and the skills required to perform them, these public safety occupations cost government employers more than \$20 per hour worked.⁹

Conversely, the private sector work force includes a large proportion of comparatively low compensated service occupations not readily found in government. For example, wages for waiters and waitresses and food preparation workers in eating and drinking establishments were often at, or below, the Federal minimum wage. In addition to wages, tips are frequently paid to employees in these industries; however, the Employment Cost Index excludes tips from the calculation of average hourly compensation because they are not part of the employer-paid compensation package.¹⁰

Differences in compensation costs between government and private industry were small for white-collar occupations that are more

Table 3. Average weekly earnings of selected occupations in selected metropolitan areas, State and local governments and private industry, 1991

Occupation	Dallas December 1991		Denver November 1991		Detroit December 1991		Los Angeles December 1991		Nassau/Suffolk November 1991	
	Private Industry	State and local govern- ment	Private Industry	State and local govern- ment	Private Industry	State and local govern- ment	Private Industry	State and local govern- ment	Private Industry	State and local govern- ment
Accounting clerk III ¹	\$410	\$368	\$404	\$431	\$431	\$474	\$451	\$502	\$436	\$525
Secretary III ²	483	433	469	485	545	536	554	658	487	533
Accountant III ³	716	670	732	679	759	686	745	795	723	849
Engineer IV ⁴	992	968	1,057	942	1,025	884	1,040	1,092	1,013	1,172
Attorney III ⁵	1,298	1,087	1,111	1,145	1,181	1,151	1,450	1,460	1,127	1,237

¹Accounting clerks, Level III, use a knowledge of double-entry bookkeeping to perform a variety of routine accounting tasks. Completed work and methods are reviewed for technical accuracy.

²Secretaries, Level III, handle differing responsibilities, situations and problems with minimal supervisory guidance, working in a complex organizational structure.

³Accountants, Level III, are responsible for day-to-day operations of a stable and well-established system, or an assigned segment of such a system.

⁴Engineers, Level IV, are fully competent in all conventional aspects of their subject matter, and perform most assignments independently.

⁵Attorneys, Level III, perform difficult legal work of substantial importance to the organization independently, with only decisions having an important bearing on the organization reviewed.

SOURCE: U.S. Bureau of Labor Statistics, Occupational Compensation Survey Program.

Table 4. Percent of full-time employees receiving benefits, and average number of days of vacation and sick leave, by length of service, State and local governments and private industry, 1990-91

Benefit Item	Private Industry			State and local governments		
	All employees	White-collar employees	Blue-collar employees	All employees	All employees except teachers	Teachers
Holidays.....	88	93	82	74	89	33
Vacation.....	92	95	89	67	88	10
Sick leave.....	56	74	38	94	94	97
Medical care.....	76	80	71	93	93	91
Life insurance.....	79	85	72	88	88	87
Long term disability.....	29	42	16	27	26	32
Sickness and accident insurance.....	35	29	41	21	23	16
Retirement.....	60	64	55	96	95	99
Defined benefit.....	39	40	38	90	89	94
Defined contribution.....	39	46	31	9	9	11
Number of holidays (days).....	9	10	9	14	14	13
Days of vacation after:						
1 year.....	8.5	9.6	7.2	12.2	12.2	12.7
3 years.....	10.5	11.2	9.7	13.4	13.4	13.3
5 years.....	12.5	13.4	11.4	15.3	15.3	14.1
10 years.....	15.1	16.0	14.0	18.4	18.5	15.6
15 years.....	16.6	17.6	15.6	20.4	20.5	16.8
20 years.....	17.8	18.6	16.8	22.1	22.3	17.9
Days of sick leave after:						
1 year.....	10.6	11.6	8.7	12.6	12.8	12.2
3 years.....	13.1	14.8	9.9	12.8	13.0	12.4
5 years.....	15.5	17.6	11.3	13.1	13.2	12.9
10 years.....	18.5	21.3	12.9	13.5	3.6	13.1

NOTE: Computation of average excluded workers with no holidays or vacation days.

closely related in both sectors. For example, executive, administrative, and managerial occupations accounted for about 1 of 6 white-collar employees in each sector, and their average hourly compensation costs were virtually identical.

However, broad comparisons between government and private employee compensation may conceal distinct differences. For example, employer costs between the public and private sectors show some variability when particular white-collar occupations in specific locations are compared. Data from the BLS Occupational Compensation Surveys Program provide average weekly wage data in selected metropolitan areas for specific occupations with similar duties and responsibilities. The results indicate that higher wages differ by occupation and location.

For example, secretaries, level III (secretaries to mid-level managers), earned approximately 10 percent less than their private sector counterparts in Dallas, but nearly 20 percent more in Los Angeles. In Detroit, level III government accounting clerks (who perform double-entry bookkeeping) averaged 10 percent more than similar private sector workers, while level III government accountants (who supervise stable and established accounting systems) averaged 10 percent less than in the private sector.¹¹ (See table 3.)

Employee benefits

More than one-third of the gap in total compensation between State and local governments and private industry was due to differences in the costs for employee benefits. Government costs for providing employee benefits were, on average, 56 percent higher than those of private employers. While governments spent an average of \$7.09 per hour worked on benefits, private industry employers spent \$4.55. (See table 1.)

Three primary factors influence benefit costs and contributed to the gap between government and private industry. First, some benefits are linked to earnings (for example, pension plans and paid leave); as a result, costs for these benefits are affected by the higher average wage levels for government occupations. Second, employee benefits generally are more common in State and local government establishments than in the private sector. Finally,

differences in the provisions of benefit plans contributed to differences in benefits costs.

A few cautionary notes are in order. It is important to emphasize that estimates of employer costs for particular benefits are not sound measures of employee welfare. For example, although a defined benefit retirement plan may be costlier to employers than a defined contribution plan, the benefit paid out to employees at retirement for a defined contribution plan may be the same or higher. Second, the incidence of benefits varies widely by establishment size in the private sector. Small private establishments with fewer than 100 employees are far less likely to provide certain types of benefits, such as retirement and health insurance, than are larger private establishments and State and local governments. Finally, due to limits in the data, we cannot calculate the precise cost to employers of specific benefit plan provisions.

The largest cost difference between State and local governments and private industry was for retirement benefits. At \$1.82 per hour worked, government retirement costs were nearly four times higher than the 46-cent cost in the private sector. Spending on retirement accounted for 26 percent of all benefit costs in government, compared with 10 percent in private industry.

The cost difference for retirement benefits reflects the incidence of benefits, the effects of wage levels, and differences in benefit provisions. Virtually all government employees (96 percent) were covered by a retirement plan, compared with only three-fifths in the private sector.¹² (See table 4.) Furthermore, calculations of employee retirement benefits are usually based on employee wages; therefore, higher aggregate average wage levels among government workers tend to increase the costs for government retirement benefits relative to the private sector. Finally, government retirement plans, as described below, tend to have different provisions than plans in the private sector.

The majority of government workers, unlike private industry workers, participated in defined benefit pension plans, typically the most expensive retirement plans in terms of employer costs.¹³ And virtually all government pension plan participants had their benefits calculated using a terminal earnings formula, compared with just under three-fifths of the private sector pension plan participants. A terminal earnings formula is usually a costlier formula

for employers because the benefit is based on a percentage of an employee's final average earnings during the several years preceding retirement, rather than a career average or a flat dollar amount.

Pension plan provisions for government employees tended to increase employer costs, but government workers also were more likely to contribute to their pension plans. Fewer than 10 percent of private sector pension participants were required to contribute, compared with 75 percent of government pension participants.

Differences in the incidence and provisions of benefits also affected government and private sector insurance costs. Insurance benefits include health, life, and disability insurance. The average cost for these benefits in government was \$1.84 per hour worked, while private sector employers paid \$1.12. The bulk of this cost, \$1.75 for government and \$1.02 for private industry, was for health insurance benefits.¹⁴

Similar to retirement benefits, health insurance benefits were offered to a greater proportion of employees in State and local governments than in private industry. Overall, about 93 percent of government employees participated in a health care plan; 76 percent of private industry employees participated.

In addition to greater coverage, health care plan provisions for government and private establishments were different in other ways. For example, the employer paid health care coverage in full for 58 percent of the government work force, while 40 percent of private sector employees had such coverage. Family health care coverage fully paid by the employer also was more prevalent among public sector employees—32 percent—than among employees in the private sector—24 percent. In addition, a larger proportion of government employees than private sector employees participated in plans, including HMO's (health maintenance organizations), that fully covered many expenses.

The average cost for paid leave benefits in government, at \$1.80, was 65 percent higher than in the private sector, which was \$1.09. Because the costs of paid leave are related directly to employee wages, higher average rates of pay for government employees were part of the cost difference between State and

local governments and private industry. In addition, differences in the incidence and provisions of certain leave plans, which varied widely among occupational groups, also affected employer costs in each sector.

The smallest difference between average costs of paid leave was among white-collar workers. The cost of paid leave for white-collar government employees was one-third more than the average for white-collar private employees, reflecting the higher average government wage rates. One exception was paid leave for government white-collar professional, specialty, and technical workers; the paid leave cost for these employees was 9 percent below that for similarly classified occupations in the private sector.

This inconsistency was due in large part to the relatively low incidence of paid holidays and vacations for teachers in State and local governments (33 percent of State teachers and 10 percent of local teachers had such benefits). Teachers account for more than two-thirds of the government professional, specialty and technical work force, and are typically paid based on a fixed number of annual school days.

In contrast to paid leave for white-collar workers, differences in the average cost of paid leave were greater between government and private industry for blue-collar and service occupations. For example, employer costs for paid leave for government blue-collar workers averaged \$1.67 per hour worked in 1992, compared with 94 cents for private sector blue-collar workers. The comparatively large disparity in the cost of paid leave for these occupations reflected higher average wage rates in government, in addition to differences in the incidence of paid sick leave. More than 90 percent of all government blue-collar and service workers were covered by sick leave. In contrast, 38 percent of such private sector workers were covered. Private sector blue-collar workers frequently received sickness and accident insurance that replaced a portion of lost wages during short-term disabilities.

Differences in plan provisions also affected the cost of paid leave. For example, government employees with paid holidays generally received more time off annually—13.6 paid holidays—than private industry employees who averaged 9.4 holidays. (See table 4.) For employees receiving paid vacations, average

benefits for workers in the public sector exceeded those for private sector workers at all lengths of service.

Employer compensation costs also include benefits required by law, such as Social Security, Federal and State unemployment insurance, and workers' compensation. Such benefits cost governments \$1.40 per hour worked, and accounted for about one-fifth of total benefit costs. The cost for private sector employers was higher—\$1.47 per hour worked—and represented nearly one-third of all private benefit costs.

Social Security, which is linked directly to wage rates, represented the majority of the cost for legally required benefits in both sectors. However, government employers are not required to provide Social Security coverage to all employees; approximately one of four employees did not have such coverage. This lower incidence of coverage among government employees offsets their higher average wage rates. The result is similar average costs for Social Security for both sectors. □

Footnotes

¹ *Employment Cost Index, June 1992*, USDL 92-471 (Bureau of Labor Statistics, July 1992).

² The occupation describes what work an employee does; the industry describes the economic activity of the employer. For example, service employees work in a variety of industries and perform a variety of duties, such as food preparation, cleaning, and guard services. Service industries, in contrast, include establishments that hire employees from all occupational groups to provide a wide variety of services (for example, health and education) to individuals, businesses, and other entities.

³ The ECI is a fixed-weight Laspeyres index that uses occupational and industry employment counts from the 1980 Census of Population. Data collected for the ECI is used to derive hourly compensation costs by using current weights. Industry employment from the March 1992 Current Employment Statistics survey, with the occupational distribution from the ECI sample, provide the current weights.

⁴ For more details about how the ECI measures compensation, see Felicia Nathan, "Analyzing employer's costs for wages, salaries, and benefits," *Monthly Labor Review*, October 1987, pp. 3-11, and the Handbook of *Methods*, Bulletin 2414 (Bureau of Labor Statistics, September 1992), pp. 56-66.

⁵ The State and local government sample was updated and expanded from 1987-1991, allowing publication of compensation cost data. These data are published annually in June with March as the reference month. See *Employment Cost Index and Levels, 1975-1992*, Bulletin 2389

(Bureau of Labor Statistics, October 1992).

⁶ Private sector data are from the 1991 Employee Benefits Survey of medium and large establishments and the 1990 survey of small establishments. Detailed data are available from the following Bureau of Labor Statistics publications: *Employee Benefits in Small Private Establishments, 1990* (Bulletin 2388, September 1991), *Employee Benefits in State and Local Governments, 1990* (Bulletin 1398, February 1992), and *Employee Benefits in Medium and Large Establishments, 1991* (Bulletin 2422, May 1993).

⁷ Throughout this article, references are made to the mix of industry and occupational employment in State and local government and private industry, and the effect of these mixes on the average costs of hourly compensation. These references relate to the employment weights, which are estimated from the Current Employment Statistics and the Employment Cost Index survey sample. See also footnote 3.

⁸ Teachers usually contract to work a set number of days a year—generally between 180 and 210—in a 9- or 10-month contract. The ECI uses the number of hours worked per year by employees as the basis for determining average hourly compensation costs. Therefore, hourly costs for teachers do not reflect the usual 12-month work year. Additionally, the incidence of leave, particularly holidays and sick leave, is much lower for teachers than for other occupational groups due to their work contracts.

⁹ The average cost of compensation for police and firefighters was \$22.28 in March 1991—the last date the police and firefighters series was published.

¹⁰ For an example of the extent of tips, see *Industry Wage Survey: Hotels and Motels, June-July, 1988*, Bulletin 2335 (Bureau of Labor Statistics, 1989).

¹¹ The Bureau's Occupational Compensation Survey Program gathers data on wage levels in a variety of local labor markets for narrowly-defined occupations. For example, see *Occupational Compensation Survey: Pay and Benefits*, Bulletin 3060-60 (Bureau of Labor Statistics, July 1992). The Occupational Compensation Surveys do not provide data on employer costs for total employee compensation, which includes employer costs for employee benefits.

¹² The data presented from the Employee Benefits Survey cover full-time employees only.

¹³ In the private sector, 39 percent of the employees participated in defined benefit plans, while 39 percent participated in defined contribution plans. Defined benefit pension plans use predetermined formulas to calculate a retirement benefit, and obligate the employer to provide those benefits, regardless of investment results. Conversely, defined contribution plans specify the contribution employers and employees must make to the plan, but do not guarantee what future benefits will be; therefore, if investment returns are low, the employer is not obligated to provide a minimum level of benefits. Defined contribution plans can also be less costly to employers than defined benefit pension plans due to other factors, including lower administrative costs and voluntary employee participation in many plans. For more information about the costs of retirement plans, see Bradley Braden, "Increases in employer costs for employee benefits dampen dramatically," *Monthly Labor Review*, July 1988, pp. 3-7.

¹⁴ See Albert Schwenk, "Employee compensation reports to include detail by type of insurance," *Monthly Labor Review*, May 1992, pp. 43-44.

Collective bargaining agreements in 1992

Despite a pick-up in the economy, the concern about job security remained, perhaps contributing to the restraint exhibited by those at the bargaining table in 1992

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Moderation dominated labor contract negotiations in 1992. Major collective bargaining settlements negotiated in private industry in the year called for changes in wage rates that were lower, on average, than those in the contracts they replaced. Additionally, wage changes provided by settlements in 1992 were, on average, at the lowest level since 1988. Furthermore, the more moderate settlements were accompanied by a record low number of major work stoppages (29) in 1992. (Data on major settlements cover bargaining units of 1,000 or more workers; data on major work stoppages cover strikes and lockouts involving 1,000 or more workers.)

Major economic indicators in 1992 may have posed somewhat of a quandary for negotiators. Gross domestic product rose at the fastest pace since 1989, and with price changes at their lowest level since 1986, inflation was not a concern. (See table 1.¹) Boosted by increases in output and a decline in labor hours, labor productivity in the nonfarm business sector posted the largest increase since 1972, and only moderate increases were recorded in employers' costs for compensation as measured by the Employment Cost Index and unit labor costs. Despite various signs of an improving economy, concern about jobs remained for those at the bargaining table. The unemployment rate continued rising during the first half of 1992, and announcements regarding job cuts—reflecting slow demand, technological

changes, and restructuring by companies—persisted throughout the year in many of the industries in which bargaining was scheduled.

Wage changes in settlements

Not since 1988 have current settlements provided wage rate changes that were lower than those in the contracts they replaced. (See chart 1.) Major settlements in 1992 provided changes in wage rates that averaged 2.7 percent increases in the first contract year and 3.0 percent annually over the contract term. (See table 2.) (The average change is the net effect of decisions to increase, decrease and not change wages.) In the previous settlements, which were primarily negotiated in 1989 and 1990, wages were scheduled to change, on average, 3.6 percent in the first year and 3.4 percent per year over the term of the contract. (The Bureau's measures of wage rate changes under collective bargaining settlements exclude potential changes under cost-of-living clauses (COLA's) and lump-sum payments.) Nearly 400 settlements were negotiated in private industry in 1992, covering 29 percent (1.6 million) of the 5.5 million workers under all major collective bargaining contracts. Four-fifths of the workers getting pacts worked in the non-manufacturing sector, primarily in the construction, communications, food store, and health services industries.

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Table 1. Selected major economic indicators, 1983-92

Measure ¹	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Percent change in										
Gross domestic product.....	3.9	6.2	3.2	2.9	3.1	3.9	2.5	0.8	-1.2	2.1
Consumer Price Index—										
for all urban consumers	3.2	4.3	3.6	1.9	3.6	4.1	4.8	5.4	4.2	3.0
Employment Cost Index ²	5.7	5.2	4.3	3.6	3.6	4.9	5.0	4.9	4.3	3.5
Labor productivity ³	2.4	2.1	.8	1.9	.8	.9	-1.0	0	.5	2.8
Unit labor costs ³	1.5	1.9	3.3	2.9	2.6	3.2	4.3	5.4	4.6	0.9
Unemployment rate.....	9.6	7.5	7.2	7.0	6.2	5.5	5.3	5.5	6.7	7.4
Major collective bargaining										
agreements, private industry ⁴										
Wage rate changes:										
Settlements ⁵	2.8	2.4	2.7	1.8	2.1	2.4	3.4	3.2	3.2	3.0
All contracts ⁶	4.0	3.7	3.3	2.3	3.1	2.6	3.2	3.5	3.6	3.1

¹Data are annual averages unless indicated.

²Data are December-to-December changes.

³Data are for the nonfarm business sector.

⁴Limited to collective bargaining agreements of 1,000 workers or more.

⁵Percent change, including net increases, decreases and zero change,

under settlements reached in the year, and annualized over the contract life.

⁶Percent change, including net increases, decreases and zero change, in wages stemming from current settlements reached in the year, settlements reached in a prior year, and cost-of-living adjustment provisions.

Average wage changes were lower in settlements reached in 1992 than in the replaced contracts primarily because their specified wage increases were smaller, on average, than those in the previous contracts. Eighty-two percent of the workers under settlements in 1992 were scheduled to receive wage increases in the first contract year, averaging 3.6 percent. The last time the same parties bargained, 85 percent of the workers had wage increases in the first contract year, averaging 4.4 percent. During the term of their contracts, 92 percent of the workers under settlements in 1992 will receive wage rate gains, averaging 3.3 percent. Under the replaced agreements, 94 percent of the workers had specified wage increases, averaging 3.6 percent annually over the contract life.

Back-loaded contracts

One way to hold down labor costs under multi-year agreements is to delay all or most of a wage rate increase until after the first contract year. Such "back-loaded" contracts were rare before 1983, but in that year and again in 1985 and 1986, settlements, on average, were back-loaded. Back-loading was prominent again in 1992, with 41 percent of workers under back-loaded settlements. Thirty-five percent of the workers were under front-loaded settlements, while the remaining 24 percent of the workers had either 1-year contracts or multi-year pacts with the same rate of wage change in the first year and annually over the contract term.

Wage changes in back-loaded settlements averaged an increase of 1.3 percent for the first contract year and 2.8 percent annually over the life of the contract. Industries in which back-loaded contracts covered the plurality of workers included construction, transportation equipment manufacturing, railroads, airlines, public utilities, food stores, and health services.

Settlements that were front-loaded called for changes in wage rates averaging a 4.4-percent increase in the first year and a 3.4-percent increase annually over the contract term. Industries in which front-loaded contracts covered the majority of workers included communications, chemicals, lumber, and food and kindred products.

Lump-sum payments

The inclusion of lump-sum payment provisions in contracts in lieu of all or part of a wage rate increase is another practice often used to restrain labor cost increases. Lump-sum payments slow the rise in labor costs because they generally are not incorporated into the wage structure, and they are frequently excluded in the computation of wage-related benefits. (While lump-sum payments are excluded from measures of changes in wage rates, they are included in measures of compensation cost changes discussed later.) About one-third (514,000) of workers under settlements in 1992 had a provision for cash lump-sum payments in their contract. They were primarily in the communications, health care services, and

transportation industries. Twenty-four settlements for 107,900 workers added lump-sum payment provisions and 49 contracts for 206,200 workers deleted them. By the close of the year, lump-sum provisions covered 36 percent of the 5.5 million workers under all major contracts in private industry.

Because lump-sum provisions may generate payments in addition to wages, contracts containing them typically specify smaller wage rate changes than contracts without them. (See chart 2.) In 1992, however, settlements with lump-sum provisions provided nearly the same average annual change in wages over the contract term (2.9 percent) as contracts without such provisions (3.0 percent). As the following tabulation on annual wage changes over the contract term suggests, some trade-offs may have occurred between guaranteed wage increases and lump-sum provisions. Settlements in 1992 that dropped lump-sum provisions called for wage changes specifying higher increases, on average, than were specified in the contracts they replaced. However, settlements that did not change the lump-sum status or that added the provision specified wage changes that were lower, on average, than in replaced contracts.

Percent wage rate change in:

	Settlements in 1992	Replaced settlements
All settlements	3.0	3.4
Settlements with lump sums—		
Discontinued in 1992	3.5	1.8
In Neither contract	2.8	3.8
In Both contracts	2.7	3.1
Added in 1992	2.9	3.5

COLA clauses

COLA clauses call for changes in wages based on a formula typically tied to changes in the Consumer Price Index (CPI). In 1992, nearly one-fifth of the workers were under settlements with COLA provisions, the lowest proportion since such data were first compiled in 1971. These workers were mostly in the communications and transportation equipment manufacturing industries. Three settlements for 4,200 workers added COLA clauses and 13 settlements for 73,300 workers discontinued them. With these changes, 28 percent of all workers under private industry collective bargaining contracts were covered by COLA's by

Chart 1. Average annual changes in wage rates over the life of the contract in current and replaced private industry collective bargaining settlements covering 1,000 workers or more, 1982-92

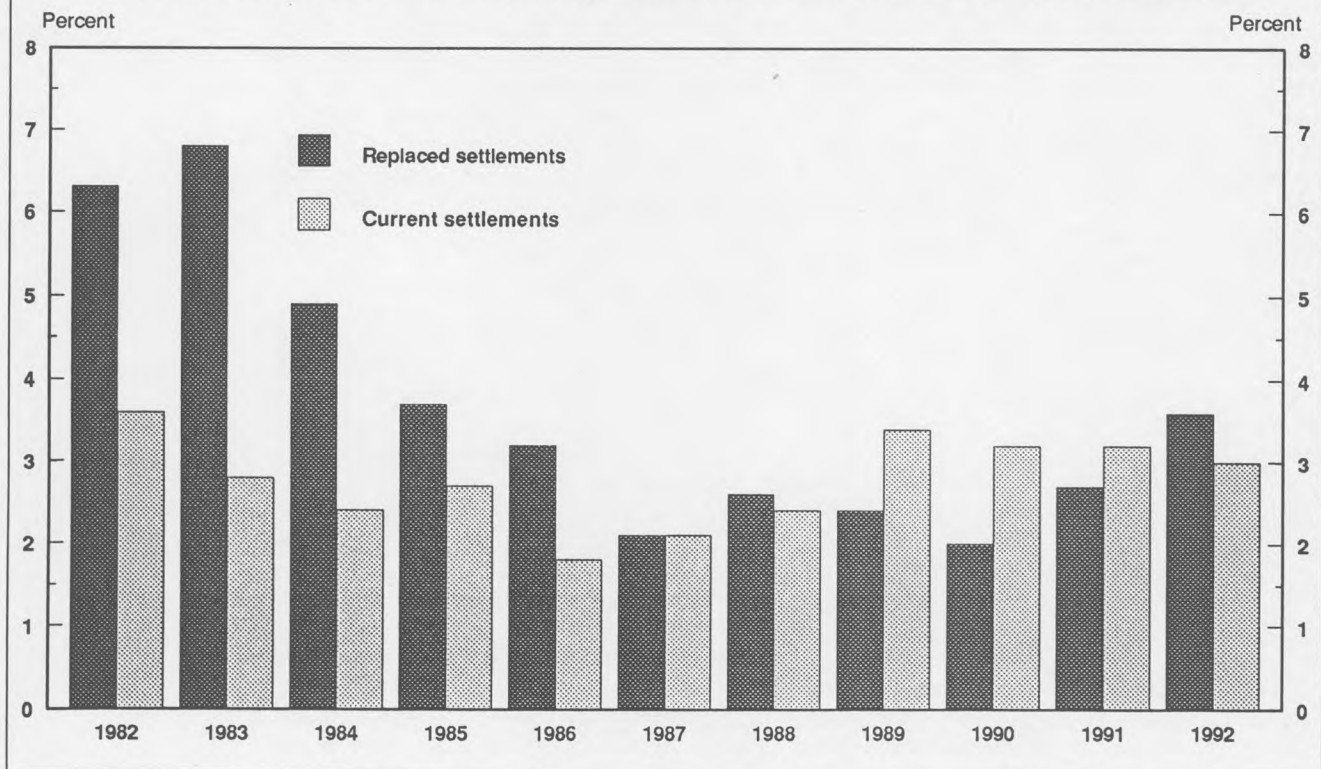


Table 2. Average (mean) changes in wage and compensation rates under collective bargaining settlements covering 1,000 workers or more, 1992

Measure	First-year change ¹ (percent)	Annual change over life of contract ² (percent)	Number of workers (thousands)	Number of settlements
Settlements covering 1,000 workers or more				
Wage changes—all industries.....	2.7	3.0	1,608	394
With COLA clauses	2.7	2.5	292	49
Without COLA clauses	2.7	3.1	1,316	345
With lump sums	2.8	2.9	514	78
Without lump sums.....	2.6	3.0	1,094	316
With both lump sums and COLA	2.7	2.5	233	27
With either lump sums, COLA, or both.....	2.8	2.9	574	100
With lump sums, but no COLA	3.0	3.3	282	51
With COLA, but no lump sums	2.8	2.6	60	22
With neither lump sums nor COLA	2.6	3.0	1,035	294
Manufacturing	2.6	2.6	318	116
With COLA clauses	1.6	1.9	131	36
Without COLA clauses	3.4	3.2	187	80
With lump sums	1.7	2.0	131	35
Without lump sums.....	3.3	3.1	187	81
With both lump sums and COLA	1.3	1.9	104	22
With either lump sums, COLA, or both.....	1.9	2.0	158	49
With lump sums, but no COLA	3.3	2.7	27	13
With COLA, but no lump sums	2.6	2.1	27	14
With neither lump sums nor COLA	3.4	3.2	160	67
Nonmanufacturing.....	2.7	3.0	1,290	278
With COLA clauses	3.6	3.0	161	13
Without COLA clauses	2.6	3.0	1,129	265
With lump sums.....	3.2	3.3	383	43
Without lump sums.....	2.5	3.0	908	235
With both lump sums and COLA	3.8	3.0	128	5
With either lump sums, COLA or both	3.2	3.2	415	51
With lump sums but no COLA	3.0	3.4	254	38
With COLA, but no lump sums	2.9	3.0	33	8
With neither lump sums nor COLA	2.5	3.0	875	227
Construction	2.0	2.4	378	130
All industries excluding construction	2.9	3.1	1,230	264
Nonmanufacturing excluding construction	3.0	3.3	912	148
Goods producing	2.3	2.5	697	247
Service producing	3.0	3.3	911	147
Settlements covering 5,000 workers or more				
Wage changes—all industries.....	2.7	3.1	919	60
Compensation changes—all industries.....	3.0	3.1	919	60
With COLA clauses	4.1	3.0	213	10
Without COLA clauses	2.7	3.2	706	50
With lump sums	3.8	3.2	376	18
Without lump sums.....	2.5	3.1	544	42
With either lump sums, COLA, or both.....	3.8	3.2	401	21
With neither lump sums nor COLA	2.4	3.1	519	39
Manufacturing	2.7	3.0	118	7
Nonmanufacturing.....	3.1	3.2	801	53
Construction	2.1	2.7	136	14
All industries excluding construction	3.2	3.2	784	46
Nonmanufacturing excluding construction	3.3	3.3	666	39
Goods producing	2.4	2.8	254	21
Service producing	3.3	3.3	666	39

¹Changes under settlements reached in the period and effective within 12 months of the contract effective date.

²Changes under settlements reached in the period expressed as an average annual rate over the life of the contract.

NOTE: Average (mean) changes include net increases,

decreases, and zero change. The lump-sum measures refer to whether or not settlements have cash lump-sum provisions. All measures exclude any cash or benefit lump-sum payments and potential changes from COLA clauses.

Because of rounding, sums of individual employment items may not equal totals.

the end of 1992, down from 30 percent at the end of 1991. COLA coverage was about 60 percent from the second half of the 1970's to 1983, then dropped steadily to the 40-percent level by 1987, where it remained until 1991.

Settlements that contain COLA provisions tend to guarantee lower wage rate changes than those without a COLA mechanism because the COLA clause may generate additional wage increases over the contract term. (At the time of the settlement, any potential payments, which depend on changes in the Consumer Price Index, are unknown and thus cannot be included in the wage change measures.) Following a pattern that has existed since 1971, when the comparison was first made, settlements in 1992 containing a COLA clause provided lower average annual wage changes over the contract term (2.5 percent) than those without COLA clauses (3.1 percent).

For all settlements in 1992, the presence of either lump-sum payments or COLA provisions made only a slight difference in the size of the guaranteed wage change over the contract term. Thirty-six percent of the workers in settlements in 1992 had either a lump-sum provision or a COLA clause, or both. Their settlements called for wage changes averaging an increase of 2.9 percent, compared with 3.0 percent in contracts with neither provision.

Manufacturing, nonmanufacturing

In manufacturing settlements, wage rate

changes averaged an increase of 2.6 percent annually over the contract life. The comparable measure in nonmanufacturing settlements was 3.0 percent.

Historically, lump-sum and COLA provisions have been negotiated for a higher proportion of manufacturing workers than for nonmanufacturing workers and this was the case again in 1992. One-half of the workers in manufacturing settlements, compared with about one-third of those under nonmanufacturing settlements, had either a lump-sum payment provision or a COLA clause, or both. For such workers in manufacturing, wage changes over the life of the contract averaged an increase of 2.0 percent per year, compared with 3.2 percent for workers under settlements with neither provision. In nonmanufacturing, contrary to what might be expected, pacts with either lump-sum or COLA provisions, or both, specified wage changes that were somewhat higher (3.2 percent) than those in contracts without either provision (3.0 percent).

Compensation changes in settlements

In addition to changes in wages, and sometimes at the expense of wage improvements, settlements often amend workers' benefit packages. Thus, a comparison between settlements in 1992 and their previous contracts based on changes in total compensation provides a more comprehensive analysis of the dif-

Table 3. Average (mean) changes in the cost of compensation and components annualized over the life of the contract in collective bargaining settlements covering 5,000 workers or more, 1992

[In percent]

Measure	Compensation	Cash payments ¹	Wages	Benefits	Number of workers (thousands)
All industries	2.1	1.9	1.9	2.6	919
With contingent pay provisions ²	2.1	2.0	2.0	2.3	311
Without contingent pay provisions ² ...	2.2	1.9	1.9	2.7	608
Manufacturing	2.1	1.5	1.7	3.4	118
Nonmanufacturing	2.1	2.0	1.9	2.5	801
Goods producing	1.9	1.5	1.6	2.8	254
Service producing	2.2	2.1	2.0	2.5	666

¹ Cash payments include wages and lump-sum payments.

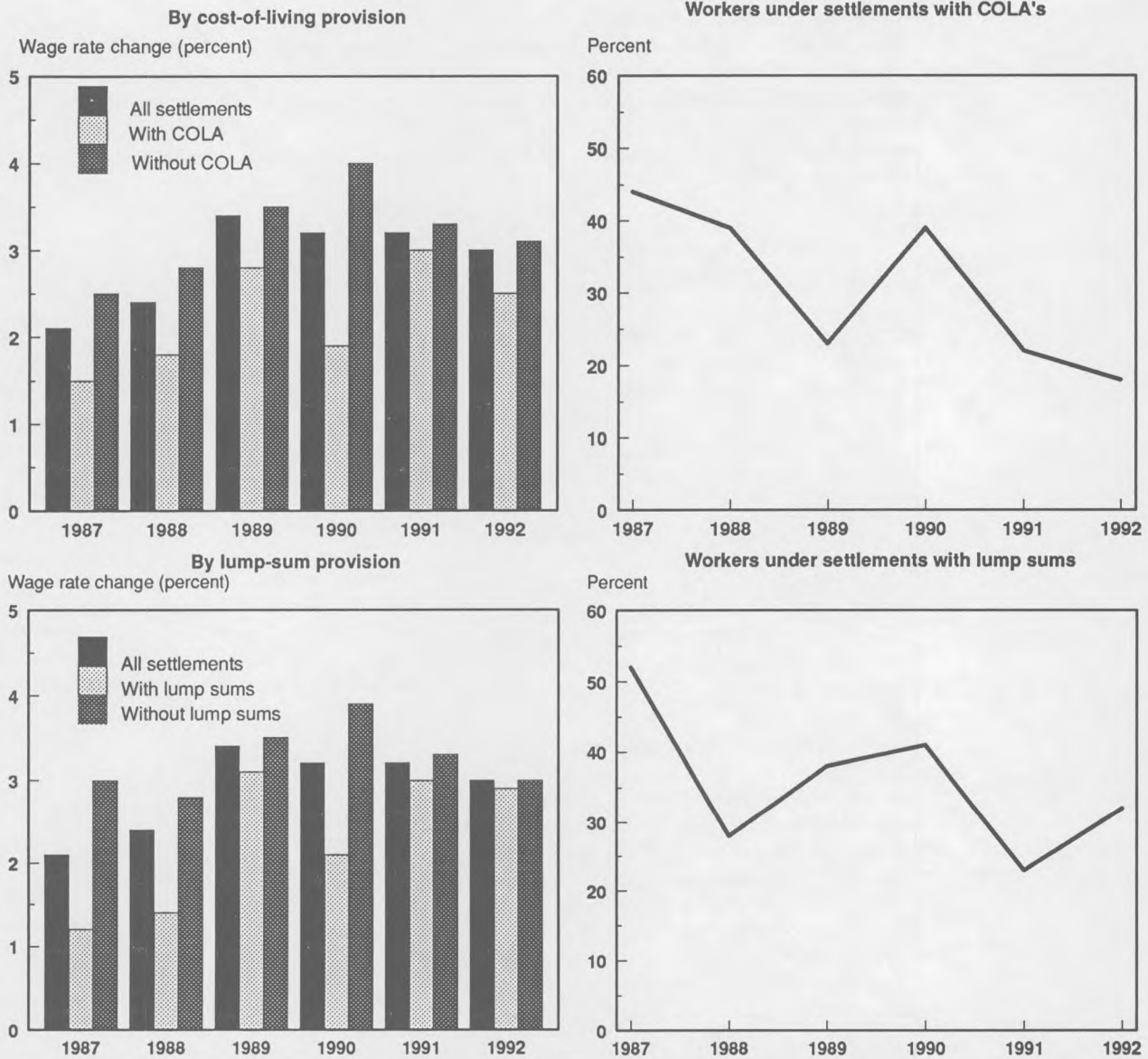
² Contingent pay provisions include COLA clauses or contingent lump-sum payment clauses, or both. Data exclude potential changes from contingent pay provisions.

NOTE: Average (mean) changes include net increases,

decreases, and zero change under settlements reached in 1992 expressed as an average annual rate over the life of the contract. Excludes potential changes from contingent pay provisions.

Because of rounding, sums of individual employment items may not equal totals.

Chart 2. Average annual change in wage rates over the life of contracts in private industry settlements covering 1,000 workers or more, 1987-92



ference than a comparison based on changes in wages alone. The average change in compensation rates, which combines both wage and benefit modifications in major collective bargaining settlements covering 5,000 or more workers, was an increase of 3.1 percent annually over the contract term for agreements negotiated in 1992. The last time the same parties bargained, the settlements specified higher changes in compensation rates, 3.7 percent. Fifty-seven percent of the workers under settlements in 1992 were in bargaining units of at least 5,000 workers.

The measure of change in compensation

rates covers the ongoing wage and benefit rate structure, but excludes lump-sum payments, which are not part of the ongoing rate. A second measure compiled for settlements with at least 5,000 workers, the change in compensation costs, includes lump-sum payments and also takes into account the length of time for which changes in wages and benefits are in effect during the contract. The average annual change in compensation costs over the contract life was lower in settlements in 1992 (2.1 percent) than in the agreements they replaced (3.2 percent).

Under settlements covering 5,000 or more

workers reached in 1992, the annual change in costs over the life of the contract averaged 1.9 percent for both cash payments (wages and lump sums) and wages alone, and 2.6 percent for benefits. This continues the trend in recent years for the cost of benefits to be increased proportionately more than wages. As indicated in the following tabulation, annual changes in benefit costs exceeded changes in wage costs in 4 of the 5 years for which the data have been compiled.

	Percent change in costs for:			
	Total compensation	Total cash payments	Wages only	Benefits
1988	1.7	1.5	1.6	2.1
1989	2.8	2.9	2.9	2.9
1990	2.4	2.2	2.1	2.8
1991	2.4	2.3	2.1	2.5
1992	2.1	1.9	1.9	2.6

Higher benefit than wage increases were also recorded during these years in the Bureau's Employment Cost Index, which covers all establishments regardless of their size or union status. In 1992, the Employment Cost Index for private industry workers reported increases of 5.2 percent for benefits and 2.6 percent for wages.

It is possible that the cost of the compensation package will rise further for some workers. In addition to specified wages, lump-sums, and benefits, about one-third of the workers under settlements for 5,000 or more workers in 1992 had provisions for contingent payments. (See table 3.) Examples of such provisions are COLA clauses and profit sharing plans. Payments under these provisions depend on future occurrences that are unknown at the time of the settlement, such as changes in the CPI or the level of a company's profits; they are not included in measures of specified cost changes. In settlements with contingent pay provisions, cost changes averaged an increase of 2.1 percent, compared with 2.2 percent in those without such provisions.

Specific industry negotiations

Annual wage rate changes over the contract term ranged from 0 to 4.4 percent among the various industries with settlements in 1992. (See table 4.) The differences in wage changes often reflected the specific conditions and problems facing negotiators, and trade-offs be-

tween wages and benefits. Highlights of the settlement terms for the industries and bargaining units affecting the largest number of workers follow.²

Construction. Construction workers accounted for nearly one-fourth (378,000) of all workers under major settlements in 1992. The 130 construction settlements provided wage changes averaging increases of 2.0 percent in the first year and 2.4 percent annually over the contract life, marking the second consecutive year in which wage changes in construction settlements were lower than those in all other industries combined. Bargaining in construction in 1992 also resulted in lower average changes in wage rates than the percent agreed to the last time the same parties met for contract talks, which was generally in 1989. With demand for construction remaining weak in most markets, the 1992 unemployment rate for private wage and salary workers in the industry (16.7 percent) was the highest since 1983.

Settlements in each of the three major construction sectors stipulated lower wage rate changes under 1992 settlements, compared with replaced agreements. Special trade settlements negotiated in 1992 provided average wage changes over the contract life of 2.8 percent per year, compared with 3.1 percent when the parties previously bargained. For building construction, average wage changes were 2.3 percent in 1992 and 3.0 percent for the previous bargaining period, and for heavy construction the measures were 2.2 percent and 2.7 percent. Average contract duration was noticeably shorter (29 months) in heavy construction settlements reached in 1992 than in the previous pacts (35 months). Duration was little changed, however, between the two sets of negotiations in the general building and special trades sectors.

Generally, because of differences in local conditions, regional variations exist in the size of wage rate changes provided by construction settlements, and this was true again in 1992. The average gain was highest in settlements in the West North Central region (3.2 percent), followed by interregional agreements—those that spanned more than one region (3.0 percent).³ Bargaining was concentrated in the Pacific and East North Central regions, which together accounted for 55 percent of workers covered by construction settlements. The following tabulation presents average annual changes in wage rates for construction settlements by region:

	Percent wage change	Percent of workers
All construction settlements ..	2.4	100
West North Central	3.2	10
Interregional	3.0	10
Middle Atlantic	2.9	12
Pacific	2.4	32
Mountain	2.2	3
New England	2.2	2
East North Central	2.0	23
South Central	1.7	3
South Atlantic	1.3	5

Communications. Settlements in the communications industry in 1992 covered about 359,000 workers, a little more than one-fifth of all workers under settlements during the year. Communications was one of the few industries in which settlements in 1992 provided wage rate changes that were higher, on average, than in the agreements they replaced, 3.5 percent annually over the contract term, compared with 2.4 percent. Wage rate changes under communications settlements reached in 1992 were also higher than in all other industries combined.

Ninety-six percent of the workers covered by settlements in the communications industry were employed by AT&T and six of the seven regional telephone companies that together constituted the former Bell System. Signing contracts in 1992 in addition to AT&T were: Ameritech, Bell Atlantic, Bellsouth Corporation, Pacific Telesis, Southwestern Bell, and U.S. West Communications. The workers were represented by either the Communications Workers of America or the International Brotherhood of Electrical Workers. NYNEX led the bargaining round when it signed new pacts in 1991 with the Communication Workers and the Electrical Workers 11 months ahead of the 1992 scheduled contract expirations. While some of the contracts expiring in 1992 were extended several times before new agreements were reached, this third round of negotiations since the court-ordered break-up of the Bell System in 1984, differed markedly from the particularly contentious bargaining in 1989. In that round, settlements for four of the seven regional telephone companies were preceded by work stoppages. None of the settlements in 1992 involved a work stoppage.

With technological changes and competitive pressures continuing to threaten unionized jobs, job security was a primary focus of the 1992 negotiations. While differing from one company contract to another, nearly all of the settlements contained new or enhanced mechanisms to address this issue. Job security improvements included provisions for shifting

work done by outside contractors to the bargaining unit, broader transfer opportunities for surplus employees, and expanding the jobs covered by the contract. For workers forced off the payrolls, there were improved rehire rights, expanded early retirement and termination benefits, and increased help with retraining. Several contracts also contained company pledges of neutrality in the union's organizing efforts among non-unionized components of the firm. All of the contracts also included improvements in wages and retained fully employer-paid health insurance. A majority of the workers in the regional telephone companies were covered by contingent lump-sum payment provisions. The AT&T contract called for two specified lump-sum stock payments under a new "Shares for Growth" program, which replaced the "AT&T Performance Award" plan.

Wholesale and retail trade. Settlements reached in 1992 in wholesale and retail trade covered 200,000 workers; some 165,000 of whom worked in food stores. The remainder were employed in drug stores, department stores, wholesale trade, restaurants, and automotive dealerships. The new agreements provided wage changes averaging an increase of 3.3 percent annually over the term of the contract.

Most of the workers under retail food store settlements were represented by the United Food and Commercial Workers and employed by local or regional chains. Their new pacts called for wage changes to average an increase of 3.2 percent annually over the term, compared with 3.4 percent in the rest of trade and 3.3 percent specified in the replaced contracts.

About one-fourth of the workers under food store industry settlements had guaranteed lump-sum payments; no settlements had contingent lump-sum provisions. Workers whose contracts provided lump-sum payments had smaller average annual wage changes over the term of the contract (2.1) percent than did their counterparts who did not receive lump-sum payments (3.6 percent.) During 1992, lump-sum payments were newly negotiated in two food store settlements for 7,500 workers and dropped in six agreements affecting 56,800 workers, bringing the proportion of workers under all major contracts in the industry with lump-sum provisions to 18 percent. Coverage has been steadily declining from a high of 60 percent in 1987.

Over the years, the presence of lump-sum provisions seems to have limited the average size of wage rate changes in food store collective bargaining settlements. For example, in 1987, when two-thirds of the workers under

settlements had a lump-sum provision, annual wage changes under industry settlements averaged an increase of 1.6 percent. In that year, annual wage changes for settlements in all industries averaged an increase of 2.1 percent. In 1990, lump-sum provisions were present in food store settlements covering less than 10

percent of the workers, and the average annual rate of change in wages was an increase of 3.8 percent. The comparable measure for all settlements in 1990 was 3.2 percent.

Health services. With seven-tenths of the

Table 4. Average (mean) changes in wage rates annualized over the life of the contract under collective bargaining settlements covering 1,000 workers or more, selected industries, 1987-92

[In percent]

Industry	1987	1988	1989	1990	1991	1992	
						Settlements	Replaced contracts
All industries.....	2.1	2.4	3.4	3.2	3.2	3.0	3.4
Mining	—	(1)	(1)	4.9	(1)	(1)	(1)
Construction.....	3.1	2.6	3.0	4.2	2.9	2.4	2.9
Building construction.....	3.6	2.7	3.0	4.0	2.7	2.3	3.0
Heavy construction excluding building.....	2.2	2.8	2.9	4.2	3.1	2.2	2.7
Special trade contractors	3.0	2.4	3.1	4.5	3.0	2.8	3.1
Manufacturing	1.3	2.1	3.2	2.1	3.1	2.6	2.6
Food and kindred products	2.7	2.2	3.1	3.4	3.2	2.6	2.5
Tobacco products	—	(1)	(1)	—	(1)	(1)	(1)
Textile mill products	5.6	2.7	4.0	4.2	4.1	4.4	4.1
Apparel and other textile products	4.0	4.1	(1)	3.5	(1)	2.5	3.2
Lumber and wood products except furniture.....	(1)	2.8	(1)	(1)	(1)	3.3	1.9
Furniture and fixtures	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Paper and allied products	1.2	1.7	1.9	2.1	1.7	2.7	1.6
Printing and publishing.....	2.1	(1)	3.2	3.5	1.6	(1)	(1)
Chemicals and allied products.....	1.9	2.7	3.5	4.0	4.1	3.7	3.9
Petroleum and coal products	(1)	2.5	(1)	5.0	—	—	—
Rubber and miscellaneous plastics products	-.7	1.3	(1)	(1)	.9	(1)	(1)
Leather and leather product.....	(1)	(1)	—	(1)	(1)	—	—
Stone, clay, glass, and concrete products	2.3	2.5	2.6	3.0	(1)	1.9	2.6
Primary metal industries	-.8	1.4	3.7	4.7	(1)	.8	1.2
Fabricated metal products	1.3	2.2	2.2	2.3	2.0	2.0	2.4
Industrial machinery and equipment .....	.3	1.2	1.7	1.3	1.2	(1)	(1)
Electronic and other electric equipment	2.1	1.8	2.8	.9	(1)	(1)	(1)
Transportation equipment.....	.9	.8	4.2	1.4	3.7	(1)	(1)
Instruments and related products	—	(1)	3.0	(1)	(1)	(1)	(1)
Miscellaneous manufacturing industries.....	(1)	3.5	(1)	—	(1)	(1)	(1)
Nonmanufacturing ²	2.7	2.5	3.4	4.0	3.3	3.0	3.6
Railroad transportation.....	2.6	—	—	—	2.9	4.1	2.6
Trucking and warehousing.....	(1)	1.0	(1)	(1)	(1)	(1)	(1)
Airlines	3.5	.7	4.6	4.6	4.3	.9	4.4
Communications	1.5	1.8	2.4	3.0	(1)	3.5	2.4
Electric, gas, and sanitary services.....	3.1	2.8	3.7	4.0	4.4	3.9	4.1
Wholesale and retail trade	1.7	3.2	3.5	3.7	3.3	3.3	3.5
Food stores	1.6	2.8	3.2	3.8	3.4	3.2	3.3
Finance, insurance, and real estate	3.5	4.7	4.8	2.9	(1)	3.7	(1)
Services	4.1	4.3	6.1	5.3	4.9	3.4	8.2
Health services	2.9	4.9	7.7	5.6	7.3	3.5	8.9

¹Data do not meet publication standards.

²Includes mining and construction, shown above.

NOTE: Average (mean) changes include net increases, decreases,

and zero change under settlements reached in the period expressed as an average annual rate over the life of the contract. Excludes lump-sum payments and potential changes from cola clauses.

Dashes indicate no observations.

workers under major contracts in the health services industry covered by a new agreement, 1992 was a heavy bargaining year in the industry. About 127,000 workers in hospitals and other health care facilities were covered under 21 contracts negotiated in 1992. Annual wage changes over the life of the contract in health care settlements (3.5 percent) were higher, on average, than in all other industries combined (2.9 percent). The pattern of higher wage settlements in health care industries than in all other industries has existed since 1982, when such data were first tabulated.

While wage gains continued to be above average in the health services industry, settlements in 1992 provided lower wage rate gains than those previously bargained, which averaged an increase of 8.9 percent annually over the life of the agreement. Settlements affecting 50 percent of all health care workers covered by 1992 settlements included lump-sum payment provisions. None of the agreements contained COLA clauses.

The Home Health Care Council of New York agreement, ratified in January 1992, covered 20,000 home health care workers represented by local 1199 of the Drug, Hospital, and Health Care Employees Union. The 2-year agreement, which was retroactive to July 1990 and increased wages by 5 percent to \$6.20 per hour, followed a 2-year agreement negotiated in 1988, which raised wages by 42 percent from \$4.15 to \$5.90 per hour. (The contract signed in January 1992 expired June 30, 1992. The parties continued operating under that contract throughout the remainder of the year, as they had not settled a new contract by the end of 1992.)

About 35 percent (45,000) of the workers under the industry's 1992 settlements were covered by the June agreement between the League of Voluntary Hospitals and Homes of New York (the league) and Local 1199 of the Drug, Hospital and Health Care Employees Union. The 3-year contract, which was effective July 1, provided a \$500 lump-sum payment and a 3-percent wage increase in the first year, a 3-percent wage increase in the second year, and a 4-percent wage increase in the final year of the agreement. The health care plan was maintained with no employee co-payments or deductibles.

The employer contribution to the benefit fund was increased by 1.2 percentage points in the first year, and 1.8 percentage points in the second to 17.53 percent of gross payroll. Employer contributions to the pension fund were raised by 1.5 percentage points to 6.75 percent of gross payroll in the first year, and to the

training fund by 0.25 percentage points to 0.75 percent of payroll in the second year. The training fund will help support a job security provision, which gives laid-off league workers preference in obtaining jobs at league hospitals. A child care fund was established, with employers contributing 0.3 percent of payroll in the third year of the agreement.

The peacefully concluded 1992 negotiations ended a 20-year series of league agreements that had been preceded by work stoppages or threats of such action. The negotiations also marked a return to pattern bargaining among former league members. In 1986, several hospitals, including the Catholic Hospitals of New York, Beth Israel Medical Center, and the Presbyterian Hospital, broke from the league and reached separate contracts with Local 1199 that included wage terms different from the league. Different terms were also negotiated in the 1989 settlements.

On the West Coast, Kaiser Permanente reached agreements at its medical facilities in Northern and Southern California. The 3-year agreement negotiated October 31 between Kaiser Permanente (Northern California) and 13,000 employees represented by Local 250 of the Hospital and Health Care Workers provided 5 percent wage increases in each year of the agreement. The new pact covers a variety of jobs ranging from nurses to housekeepers; workers in classifications in which Kaiser has had trouble recruiting new employees, such as nurses and technical staff, received an additional 2-percent wage increase. Evening and night shift differentials were increased by 25 cents per hour in the first year to a range of \$1-\$1.95 per hour. The contract also provided an additional \$2 per hour (was \$1) in lieu of benefits for technical employees working less than 20 hours per week.

In Southern California, Kaiser Permanente negotiated a 3-year agreement on June 22 with 6,000 nurses and physicians' assistants represented by the United Nurses Association of California. In the first year, nurses received a 4-percent wage increase and physicians' assistants received 4.5 percent. In the second and third years of the agreement, all covered employees will receive 2 percent each year, or whatever increase is necessary to keep wage rates 4 percent above the average rate paid by 25 other area hospitals.

Electric, gas, and sanitary services. Approximately 97,000 workers were covered by 34 contracts reached during 1992 in the electric, gas, and sanitary services industry. Major settlements included the pact between Consol-

idated Edison Company of New York and the Utility Workers of America, and the Commonwealth Edison of Illinois and Florida Power and Light contracts with the Electrical Workers.

Bargaining in the industry is at the local level and settlement terms vary with the parties involved. All of the settlements provided wage increases in the first contract year, with the gains ranging from 1.9 percent to 7.6 percent. The range of the annual wage changes over the contract terms was much narrower, 2.1 percent to 4.7 percent. Overall, settlements in the industry provided wage changes averaging 4.1 percent in the first contract year and 3.9 percent annually over the life of the contracts, nearly the same as the replaced contracts.

Continuing a pattern exhibited since the data were first tabulated in 1982, wage settlements in the electric, gas, and sanitary services industry were higher, on average, than those in all other industries combined. As in the past, the utility settlements also tended to forgo provisions for lump-sum payments or COLA's. Only 14 percent of the workers under 1992 settlements were covered by contracts with either of these clauses.

The Boeing Company. Amid continuing cuts in spending and employment in the aerospace industry, Boeing concluded two settlements during 1992. In early October, Boeing and the International Association of Machinists reached an agreement for 46,000 workers in Washington, Oregon, and Kansas. An identical agreement was negotiated in mid-October with the United Automobile Workers for 2,900 workers in Pennsylvania.

The 3-year contracts called for a lump-sum payment for the first year of the contract equal to 12 percent of the employee's earnings during the previous contract year, and wage increases of 3.5 percent in the second and third contract years. A two-tiered wage system was established, with lower rates for new-hires in the six lowest job levels. Wage rates for new hires in the four highest classifications were increased. The COLA clause was continued unchanged from the previous contracts, and 30 cents was prepaid in October 1992, to be offset by COLA amounts generated by the subsequent quarterly reviews.

Benefit improvements included increased life insurance and higher payments for accidental death and dismemberment, and disability. Pensions were increased from \$30 to \$35 per month for each year of credited service. Peaceful negotiations were threatened when Boeing sought to have workers begin paying part of

their health care insurance. A confrontation was avoided when Boeing agreed to continue to fully finance employee health insurance.

Wage changes in all contracts

The average change in wage rates from all major contracts (those covering at least 1,000 workers) in effect during 1992 was an increase of 3.1 percent, compared with 3.6 percent in 1991. Prior to 1992, the average change in wages had risen for three consecutive years. In any year, collective bargaining contracts can generate wage changes from one or more sources: settlements negotiated in the year, settlements reached in prior years, and the operation of COLA clauses. Whether the wage change is an increase or a decrease, the size of the change, and the number of workers receiving the changes all affect the average change.

The moderation in 1992 in the average wage change under all contracts reflects several of these factors, and a comparison with 1991 measures can help illustrate their effects. The relatively modest first year increases provided by settlements negotiated in 1992 and the high percentage of workers not receiving an increase in the first year of their contract held the contribution to the average wage rate change from settlements in 1992 to 0.8 percent. In 1991, the comparable measure was 1.1 percent, reflecting higher average first year changes provided by 1991 settlements and a larger proportion of workers receiving changes.

In 1992, the contribution from settlements reached in earlier years was 1.9 percent, the same as in 1991. In both years, about the same percentage of workers under all major contracts received deferred wage increases and the average increases were nearly the same size. Wage changes from COLA's contributed 0.4 percent in 1992, down from 0.5 percent in 1991. While the average wage increase generated by COLA clauses was the same in 1992 as in 1991, the proportion of workers receiving a COLA was considerably smaller in 1992.

Overall in 1992, 85 percent of the 5.5 million workers under all major contracts received a wage rate increase, averaging 3.7 percent. Nearly 1.3 million workers had gains averaging 3.6 percent from settlements negotiated in 1992, and 2.8 million workers received increases averaging 3.8 percent from settlements reached earlier. About 1 million workers received an average increase of 2.0 percent from COLA's. (Some workers received a change from more than one source.)

About 782,000 workers were covered by contracts that did not change wages in 1992, and 72,000 were under contracts that called for wage rate decreases. The decreases averaged 5.3 percent and resulted primarily from settlements during the year.

WAGE RATE CHANGES under settlements in 1992, were lower, on average, than those in

agreements they replaced, reversing a pattern of higher new pacts that existed between 1989 and 1991. In addition, the greater part of the wage increases under many settlements were delayed beyond the first contract year. Contracts for approximately 2 million workers are scheduled to be renegotiated in 1993. Whether they will continue the moderation of 1992 remains to be seen. □

Footnotes

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¹ This article uses annual average data from the Consumer Price Index for all Urban Consumers (CPI-U). Another way to measure price change is the December-to-December change discussed in Richard C. Bahr, "Consumer price rise slows further in 1992," pp. 53-56.

² For more detailed terms of 1992 settlements, see various issues of *Compensation and Working Conditions*, a monthly publication of the Bureau of Labor Statistics; and Susan Behrmann, Michael H. Cimini, and Eric Johnson, "Labor-management bargaining in 1992," *Monthly Labor Review*, January 1993, pp. 19-34.

³ Regions and the States they comprise (including the District of Columbia) are the following: New England—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut; Middle Atlantic—New York, New Jersey, Pennsylvania; East North Central—Ohio, Indiana, Illinois, Michigan, Wisconsin; West North Central—Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas; South Atlantic—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida; South Central—Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas; Mountain—Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada; Pacific—Washington, Oregon, California, Alaska, Hawaii.

Multifactor productivity in the utility services industries

Growth in multifactor productivity in these industries slowed by 3.2 percent per year after 1973, according to a new BLS study; results also show the impact of energy price increases on the utility services industries, which are heavily dependent on fossil fuel inputs

John L. Glaser

This article introduces a new BLS measure of multifactor productivity for the utility services industries, that is, electric, gas, and sanitary services.¹ The measure relates output to inputs of capital, labor, energy, materials, and purchased business services. By contrast, the previously available BLS labor productivity measure relates output to labor input only.² It is important to consider factors other than labor in measuring productivity for the utilities because capital, energy, and materials each account for a larger portion of utilities' total costs than does labor; thus, it is reasonable to expect the industry to strive for productivity gains in the use of these inputs. In particular, the heavy use of fossil fuels by utilities offers a unique opportunity to study the impact of past energy price increases on productivity.

After 1973, labor productivity growth slowed by 1.7 percent per year in the nonfarm business sector.³ A much larger slowdown of 6.4 percent per year occurred in electric, gas, and sanitary services. This finding is consistent with the view that the productivity slowdown partly reflected rising energy prices. Given the extensive consumption of fossil fuels by electric and gas utilities, large increases in the relative cost of energy would be expected to alter

the optimal mix of inputs in this industry. Moreover, passing on higher energy costs would tend to reduce demand for the industry's output, limiting some important sources of productivity growth. Capacity utilization could fall, compromising existing scale economies. But also, acquisitions of new plant and equipment could be delayed, along with any technical improvements associated with them.

It is important to know whether multifactor productivity growth, like labor productivity growth, has slowed significantly over the years. Average annual rates of growth in multifactor productivity are reported here for 1948 through 1988. Data for the pre- and post-1973 periods reveal the extent of the productivity slowdown in utility services industries. The multifactor productivity framework is also used to examine single-factor productivity ratios for inputs other than labor and whether they rose or fell following the energy price increases.

This article contributes to our understanding of productivity and costs in the services sector generally. For example, 12 percent of capital income in the nonfarm, nonmanufacturing sector of the economy accrued to utility services industries in 1988, and electric utilities have accounted for more than one-third of

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annual energy consumption in the United States since 1981.⁴ Thus, examination of productivity gains stemming from these and other factors in utility services industries is an important component of an effort to understand multifactor productivity trends in services as a whole.⁵

Methodology

Measurement framework. Multifactor productivity is defined as output per unit of combined inputs of capital, labor, energy, materials, and purchased business services. Since multifactor productivity growth is being measured for a small group of industries in this study, it is important that intermediate inputs—energy, materials, and services—are explicitly included. Measures of productivity for large sectors of the economy may reasonably be defined in terms of real value-added output relative to labor and capital inputs. This is because most intermediate inputs are both produced and consumed within large sectors; therefore, intermediates would be counted as both inputs and outputs in gross output measures. It follows that value-added measures avoid double counting intermediate transactions. By contrast, for multifactor productivity measures of smaller groups of industries, such as the utilities sector, it becomes more important to consider the effects of intermediate inputs. If intermediates were omitted, economies or diseconomies in their use would not be reflected correctly in the productivity measure.

Inclusion of intermediate inputs implies a broader definition of *output*. Now, gross output would equal all sales by public utilities, including those to other utilities. In this study, we develop measures of *sectoral output*, defined as sales to customers *outside* the public utilities sector.⁶ Sectoral output differs from gross output in that it avoids double counting *intraindustry* transactions. These transactions are important for electric and gas utilities because of the substantial amounts of gas and electricity resold among them and because of consumption of gas by electric utilities.

Intraindustry sales of gas and electricity are excluded from input as well as from output. With respect to the electric utilities, this helps to focus the analysis on efficiency in the conversion of fossil fuels to electricity and on the delivery of electricity to end users. In effect, those quantities of electricity transmitted between producers are removed from both output and energy input.

Identification of intraindustry gas sales is complicated by the fact that the gas industry is

divided between two major SIC industry groups. Gas is produced at wells and processing plants classified in SIC 13, oil and gas extraction. It is then purchased by pipeline and distribution companies in SIC 49 and is transported, after possibly being stored for a time, and delivered to final consumers. Gas sold by producers in SIC 13 to pipelines and distributors in SIC 49 is classified as input in this study, but gas resold by pipelines to distributors is not. The latter transactions account for the bulk of intraindustry gas sales. Purchases from gas utilities by electric utilities are also excluded from energy input and from output.

Typically, utility companies are engaged in two major types of activities: delivery of utility services and construction of facilities. Construction work performed by utilities is considered an output of the *construction industry*, and not the utility services industry, because it is a fundamentally different type of production from the delivery of utility services.⁷

The measure of multifactor productivity in utility services industries introduced in this analysis is an index computed from annual rates of multifactor productivity growth. The multifactor productivity growth rate is computed as the rate of growth in sectoral output less the rate of growth in aggregate input; that is,

$$(1) \quad \Delta \ln A = \Delta \ln Y - \Delta \ln I,$$

where $\Delta \ln$ refers to differences in successive logarithms, A is an index of multifactor productivity, Y is an index of sectoral output, and I is an index of aggregate input.

The measure I is computed as a Tornqvist index of the five major types of inputs as follows.⁸ First, annual rates of growth in aggregate input are computed:

$$(2) \quad \Delta \ln I = \sum_i w_i \Delta \ln X_i.$$

Here, $\Delta \ln$ refers to differences in successive logarithms, X_i are quantity indexes of inputs i ($i = K, L, E, M, S$), and w_i are averages of the factor shares in income of each input (s_i) in the current and previous years; that is,

$$(3) \quad w_{i,t} = (s_{i,t} + s_{i,t-1}) / 2.$$

Then the aggregate input index (I) is constructed as a "chain index," that is to say, by setting I_0 equal to 1 in the first year and computing I_t for each successive year—1 year at a time—using the time series of input growth rates ($\Delta \ln I_t$) and the formula

$$(4) \quad I_t = I_{t-1} e^{\Delta \ln I_t}$$

Similarly, the multifactor productivity index (A) is constructed from the multifactor productivity growth rates ($\Delta \ln A_t$) in formula (1):⁹

$$(5) \quad A_t = A_{t-1} e^{\Delta \ln A_t}$$

Data. Total input is a Tornqvist aggregate of quantity measures for each of the five major types of input. These major input measures are, in turn, Tornqvist indexes of more detailed input categories, as dictated by the availability of data. In general, we begin with quantity indexes for specific inputs at the most detailed level that source data permit. A price series corresponding to each input is calculated by dividing current dollar expenditures on the input by the quantity index. These data permit computation of Tornqvist chain indexes for each major type of input and, thus, for total input.

Total output is computed as a Tornqvist aggregate of quantity indexes for the output of

each utility service.¹⁰ In turn, output indexes for both electricity and natural gas services are derived from sales and revenue data for several categories of consumption.¹¹

Ideally, source data express quantity in physical units and in sufficient detail that each category within output and input is homogeneous. This is approximately true for electricity and gas output and for capital and energy inputs. Data for electricity and gas output are reported by type of customer, distinguishing otherwise homogeneous products on the basis of their unit costs of production and delivery. Aggregate capital input is derived from data for 17 types of capital, and energy input is based on 10 different fuels. Physical quantities are also reported for gas used as a material input in production.

Data on expenditures must be relied upon in the development of both nongas materials and business services inputs. Several categories of purchases are deflated separately prior to aggregation, in an effort to obtain the most reliable constant-dollar measures possible.

Table 1. Compound annual rates of change in productivity and related measures for the utility services industries, 1948-88

Period	Multifactor and single-factor productivity					
	Multifactor productivity QY/QI	Capital QY/QK	Labor QY/QL	Energy QY/QE	Materials QY/QM	Business services QY/QS
1948-88	2.4	1.8	3.8	1.3	2.9	0.6
1948-73 (a)	3.6	3.4	6.2	1.2	3.6	.9
1973-88 (b) .....	.4	-.8	-.2	1.4	1.9	.1
Change (b - a)	-3.2	-4.2	-6.4	.2	-1.7	-.8
	Output and Input					
	Output QY	Capital QK	Labor QL	Energy QE	Materials QM	Business services QS
1948-88	5.4	3.6	1.6	4.1	2.5	4.8
1948-73 (a)	7.8	4.3	1.5	6.5	4.1	6.9
1973-88 (b)	1.6	2.4	1.8	.2	-.3	1.5
Change (b - a)	-6.2	-1.9	.3	-6.3	-4.4	-5.4
	Prices					
	Output PY	Capital PK	Labor PL	Energy PE	Materials PM	Business Services PS
1948-88	3.7	5.8	6.5	5.4	7.3	4.5
1948-73 (a) .....	.6	4.3	5.5	2.1	4.0	3.2
1973-88 (b)	9.2	8.5	8.1	11.0	13.1	6.8
Change (b - a)	8.6	4.2	2.6	8.9	9.1	3.6

NOTE: Q = quantity; P = price; Y = sectoral output; I = total inputs; K = capital input; L = labor input; E = energy input; M = materials input; S = purchased business services input.

Only labor input is based on one category of source data. It is measured in hours paid for, where hours of all employees are considered homogeneous. Hours of employees devoted solely to construction of new facilities are excluded. This is consistent with the definition of output as utility services provided to other sectors. Labor hours devoted to construction of facilities are an input to the construction industry. The facilities themselves are capital goods and are inputs to the utilities services industry.

Results

Measures of growth in multifactor productivity and in single-factor productivities for the utility services industries appear in table 1. Growth rates in quantities and prices of output and each of the five major inputs are also displayed. The growth rates are presented for 1948 to 1988, as well as for the pre-1973 and post-1973 periods, which, by convention, are compared in studies of the productivity slowdown.

Multifactor productivity in utility services industries grew at an average rate of 2.4 percent per year from 1948 to 1988, compared with 1.2 percent per year in the whole nonfarm business sector. The average rate spans periods of quite different performances in productivity by the utilities. A rate of growth of 3.6 percent per year during the 1948-73 period was followed by a 0.4-percent annual growth rate from 1973 to 1988. This slowdown of 3.2 percent per year reflects a dropoff of 6.2 percent per year in the growth rate of output, accompanied by a 2.9-percent decline in the annual rate of input growth. (See chart 1.)

The first absolute declines in utility services output in the postwar era occurred in 1974 and 1982. These years also witnessed falling output for the nonfarm business sector. The slower growth of utility services output after 1973 coincided with average increases in the price of utility services of 9.2 percent per year.

Total input growth is a weighted sum of changes in the quantities of individual inputs, with the weights being the shares in total income of each input. Table 1 shows rates of growth in the quantities of individual inputs, and table 2 shows the average share in income of each. In the post-1973 period, the only input whose quantity decreased was materials, while energy input grew very slowly. (See chart 2.) The use of purchased business services increased, but contributed little to growth in total input, due to business services' modest share in income. Capital input, with a 38-per-

Table 2. Average factor shares in income in utility services industries, 1948-88

Period	Total Input	Capital	Labor	Energy	Materials	Business services
1948-88.....	1.00	0.45	0.18	0.14	0.15	0.08
1948-73 (a).....	1.00	.49	.21	.10	.12	.08
1973-88 (b).....	1.00	.38	.15	.21	.18	.08
Change (b - a).....	.00	-.11	-.06	.11	.06	.00

cent average cost share from 1973 to 1988, grew faster than output and accounted for two-thirds of total input growth after 1973. Labor input growth also added to growth in aggregate input.

Comparisons of changes in output relative to those in each input are expressed as single-factor productivity statistics in table 1. Although these statistics relate changes in output to changes in individual types of input, they do not measure the specific contribution of any single factor of production. Rather, they reflect the joint effects of many influences, including changes in technology, in levels of output, and in the organization of production.

Capital productivity growth slowed 4.2 percent per year from the pre-1973 period to the post-1973 period. While output growth fell by

Table 3. Percent of capacity utilization, utilities, 1967-88

Year	Percent
1967.....	93.4
1968.....	94.1
1969.....	95.8
1970.....	95.4
1971.....	93.9
1972.....	94.6
1973.....	92.9
1974.....	86.8
1975.....	83.9
1976.....	84.8
1977.....	84.6
1978.....	84.8
1979.....	85.9
1980.....	85.5
1981.....	82.8
1982.....	79.5
1983.....	80.3
1984.....	82.5
1985.....	83.5
1986.....	80.2
1987.....	82.5
1988.....	84.2
1967-73 average.....	94.1
1973-88 average.....	85.8

Chart 1. Output, total input, and multifactor productivity in utility services industries, 1948-88

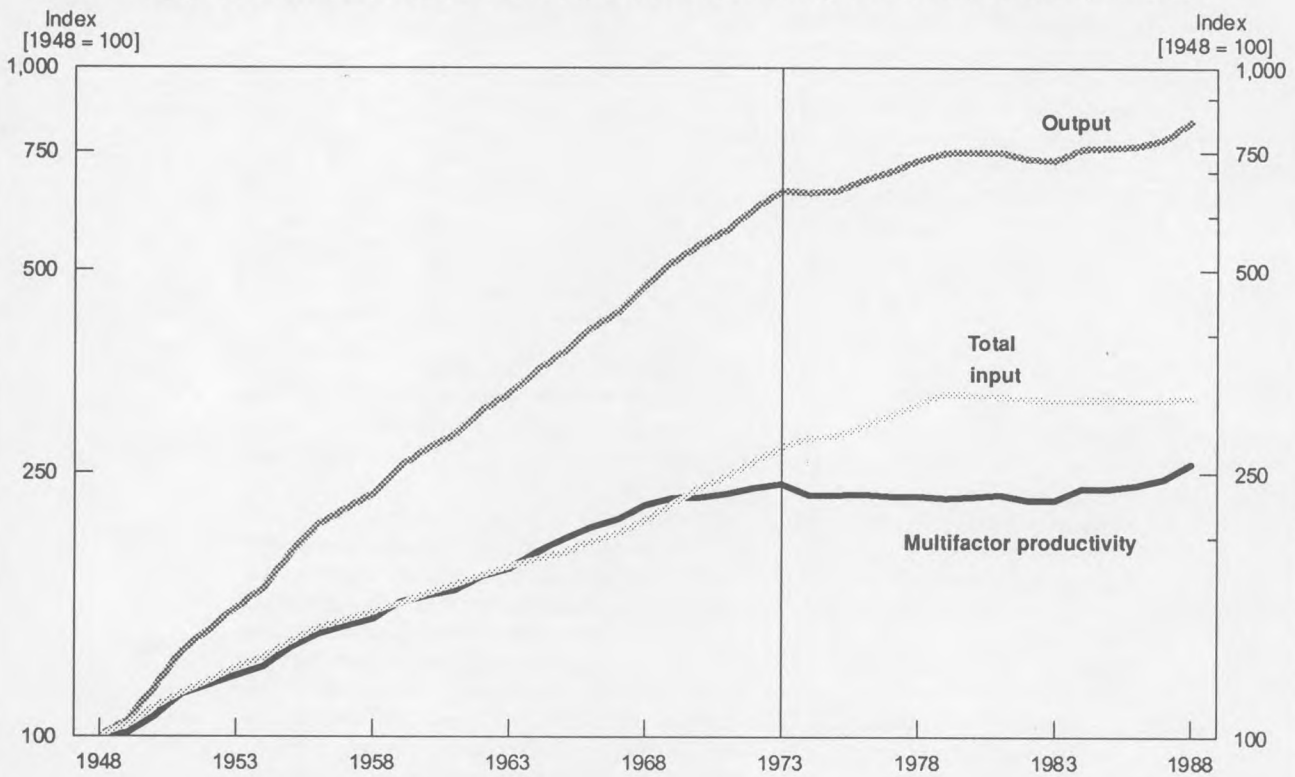
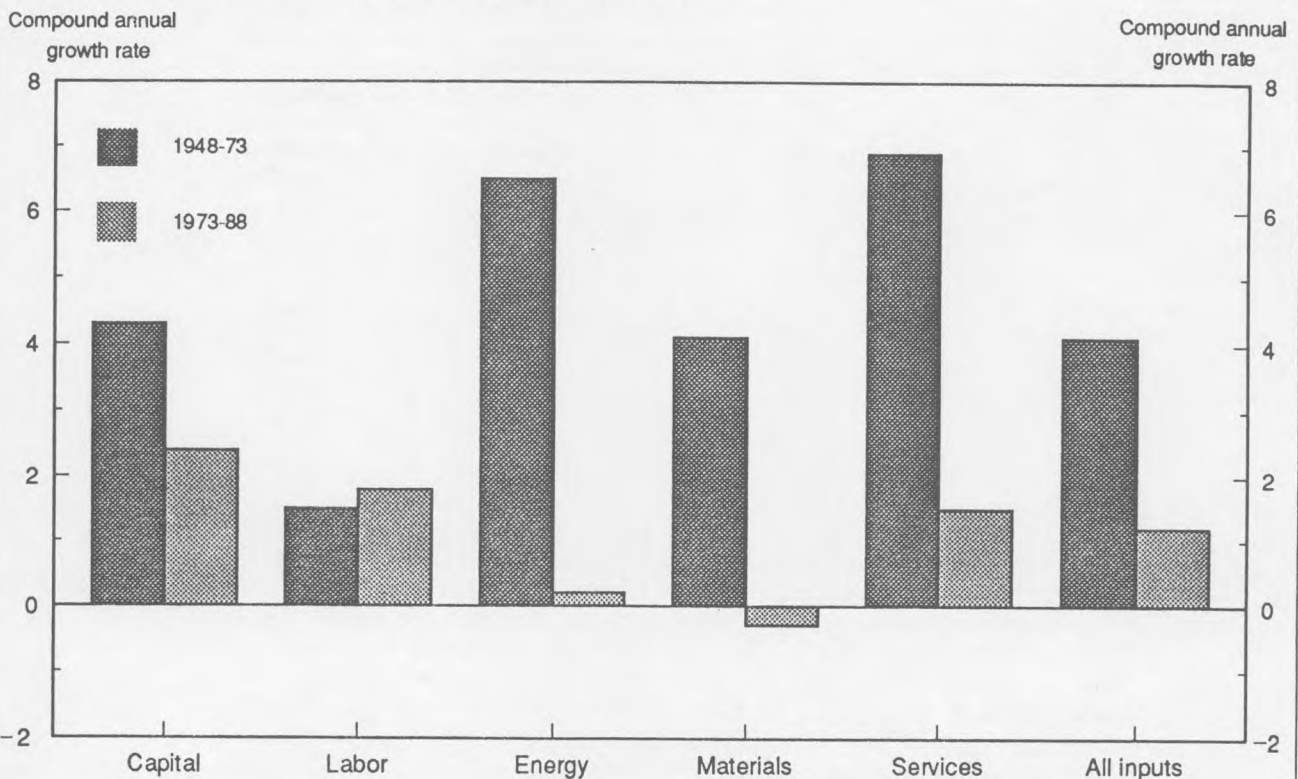


Chart 2. Growth in input quantities before and after 1973



6.2 percent annually, capital input growth fell by only 1.9 percent per year. This difference may be explained by the nature of capital investment in the public utilities industry. Capital stock is extremely inflexible for utilities. Investment in electricity-generating plants, gas pipelines, and sewer lines must begin years ahead of desired completion. Once built, these structures may last for several decades. When demand falls short of expectations, capital input is adjusted in the short run by decreasing the use of existing capital, rather than by reducing the level of capital stock or expenditures on future capital. For example, slow economic growth from 1973 to 1975 and from 1979 to 1983, combined with high electricity and gas prices, resulted in depressed demand for utility output after 1973. Meanwhile, investment initiated years earlier under conditions of growing demand came to fruition and expanded capacity. These two effects together resulted in excess capacity, as illustrated in table 3 (page 37).¹²

Excess capacity has important implications for the interpretation of the slowdown in capital productivity after 1973. When capacity is underutilized, the capital services input measure may overstate capital input.¹³ Output per unit of capital would, in turn, be understated. If the capital input measure does not fully capture changing capacity utilization, then growth in capital services input declined more than 1.9 percent per year after 1973, and the post-1973 slowdown in capital productivity is exaggerated.

Labor productivity growth in utility services showed an even more pronounced drop than did multifactor productivity, from an increase of 6.2 percent per year before 1973 to a decline of 0.2 percent per year for the 1973-88 period, or a drop of 6.4 percent per year between the two periods. Changes in output per hour were similar to those in output, because the use of labor accelerated slightly after 1973, while the consumption of all other inputs slowed. However, it is important to remember that this dropoff in output per hour is indicative of substitution effects among all inputs, as well as other effects, and therefore does not attribute poor productivity performance solely to labor.

A relationship between measures of labor productivity and multifactor productivity can be derived from the formula (1) used to compute multifactor productivity growth.¹⁴ Changes in labor productivity may be expressed as the combination of multifactor productivity growth and changes in the ratio of each nonlabor input to labor. In table 4, the post-1973 slowdown in labor productivity

Table 4. Portions of labor productivity growth attributable to multifactor productivity growth and shifts in factor intensity, 1948-88
(Percent changes at compound annual rates)

Period	Output per hour	Contributions from—				
		Multifactor Productivity	QK/L	QE/L	QM/L	QS/L
1948-88	3.8	2.4	0.9	0.2	0.0	0.2
1948-73 (a)	6.2	3.6	1.4	.5	.3	.4
1973-88 (b)	-2	.4	.3	-.4	-.5	.0
Change (b - a).....	-6.4	-3.2	-1.1	-.9	-.8	-.4

NOTE: Q = quantity; K = capital input; L = labor input; E = energy input; M = materials input; S = purchased business services input.

growth is explained in terms of multifactor productivity growth and contributions of factor intensities.¹⁵ During the 1948-73 period, all of the nonlabor inputs grew relative to labor and thus enhanced labor productivity growth. However, multifactor productivity growth of 3.6 percent per year outweighed all of these factor intensity effects (2.6 percent per year combined). By the same token, half of the dropoff of 6.4 percent per year in output per hour growth after 1973 is attributed to the slowdown in multifactor productivity. The falling rate of growth in the capital-to-labor ratio was associated with 1.1 percent per year of the decrease in output per hour growth. And declines in the ratios of both energy and materials to labor contributed another quarter of the slowdown in labor productivity growth.

Table 1 shows that energy productivity growth accelerated 0.2 percent per year after 1973, while all other single-factor productivity growth rates decreased. (See chart 3.) This may have been due to the rapid increase in the price of fossil fuels, which provided an incentive to economize in their use. From 1973 to 1988, the price of energy inputs increased 11.0 percent per year, and the consumption of energy inputs by utilities slowed more after 1973 than that of any other input. (See chart 2.) The cost share of energy input doubled, despite the slowdown in energy consumption of 6.3 percent per year after 1973.

Growth in output per unit of materials input fell from 3.6 percent per year for the 1948-73 period to 1.9 percent per year during 1973-88, but this figure was still the highest productivity growth rate of any input in the post-1973 period. Materials prices increased 13.1 percent annually after 1973, due primarily to the price of natural gas, which accounts for two-thirds of materials input purchases. (See chart 4.) The large increase in materials prices led to a rise in the cost share of materials, from 12 percent

Chart 3. Growth in single-factor productivities and multifactor productivity before and after 1973

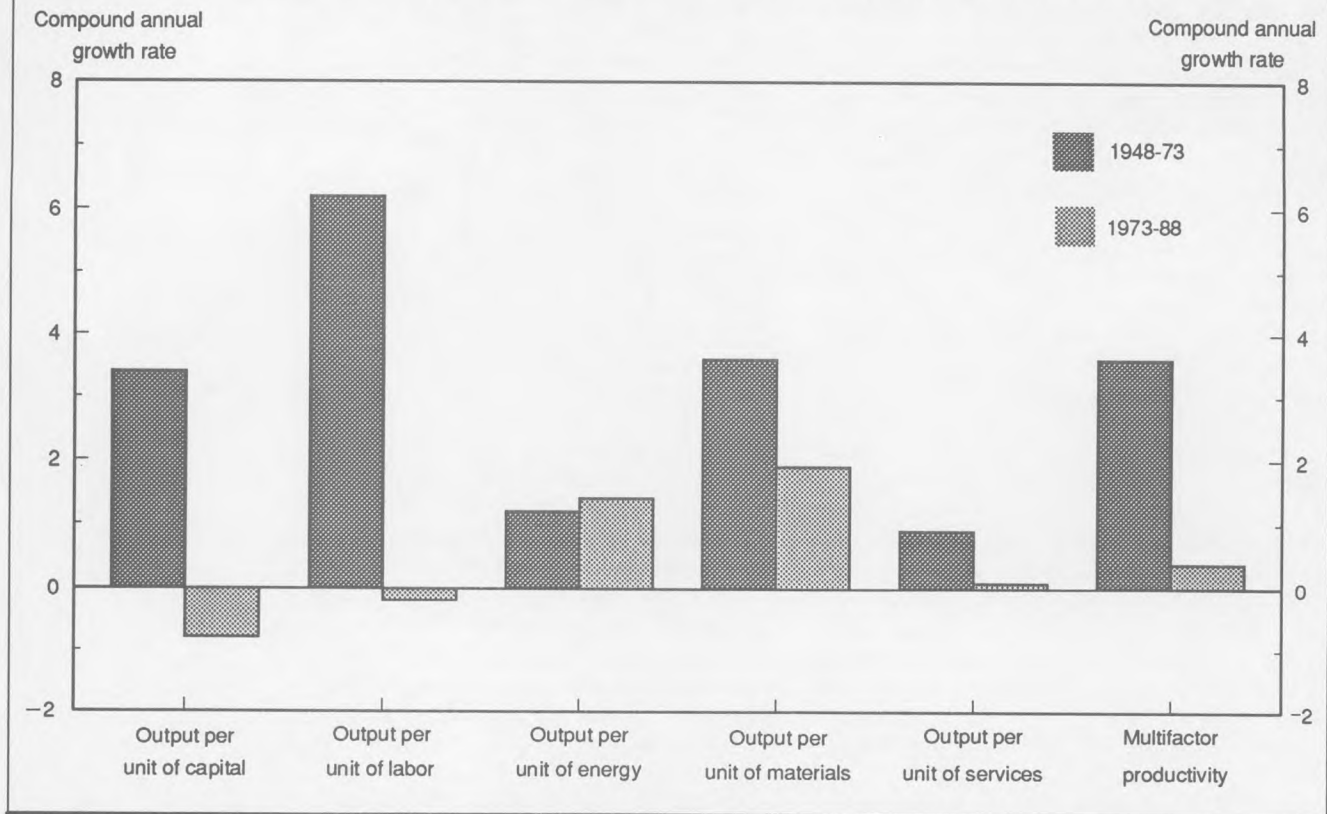
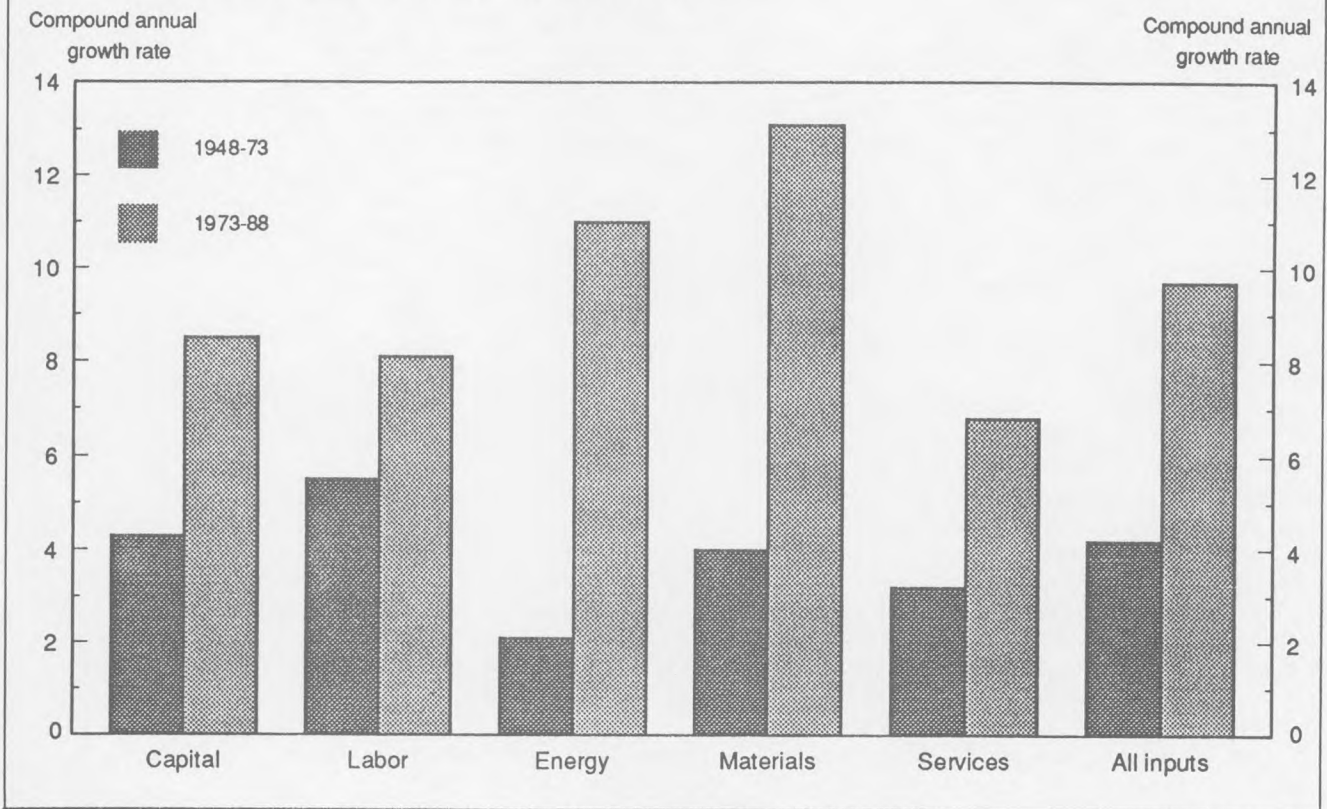


Chart 4. Growth in input prices before and after 1973



during 1948-73 to 18 percent for the 1973-88 period, even though the annual growth rate of materials use fell 4.4 percent after 1973, to -0.3 percent per year.

Of all single-factor inputs, business services showed the least improvement in productivity over the study period, 0.6 percent per year. Average increases of 0.9 percent annually from 1948 to 1973 were not sustained after 1973, when the growth rate fell to an average of 0.1 percent per year. (See chart 3.) Because the share of services in total factor cost was only 8 percent, this backslide did not contribute significantly to the slowdown in multifactor productivity.

Summary and conclusions

The BLS project presented in this article developed indexes of total output and five major inputs for utility services industries, which are used to compute an index of multifactor productivity. The annual rate of change in the multifactor productivity index for the 1948-88 period was 2.4 percent per year. Results for the periods before and after 1973 are also reported and reveal a multifactor productivity slowdown of 3.2 percent per year. Single-factor productivity statistics show large slowdowns in both labor and capital productivity for public utilities. Energy productivity grew an average 1.3 percent per year throughout the 1948-88 period and was unique in its improvement from the pre-1973 to the post-1973 period. Although materials productivity growth slowed after 1973, at 1.9 percent per year it exceeded all other single-factor productivities during the post-1973 period.

Rates of growth in the quantities and prices of inputs and output are presented and provide insight into the continued growth in energy and materials productivity. Energy consumption grew 6.5 percent per year, on average, from 1948 to 1973 and then leveled off. Materials input use increased 4.1 percent annually during the same period, but declined 0.3 percent per year thereafter. Meanwhile, consumption of all other inputs continued to grow in the post-1973 period, which suggests that other inputs were substituted for energy and materials after 1973. This is not surprising, given the growth in the prices of those two inputs: 11.0 percent per year for energy and 13.1 percent per year for materials during 1973-88.

Analysis of the two components of materials input revealed that output per unit of nongas materials fell off dramatically after 1973, while productivity of natural gas used as a material

input improved.¹⁶ Natural gas accounts for about two-thirds of materials expense, so increasing fossil fuel prices after 1973 may have had a positive impact on the efficiency with which natural gas is transported, similar to the improvement in energy productivity, representing fossil fuels that are burned.

Capital is found to account for a much larger share in total factor income than any other input, so that changes in capital input have a bigger impact on multifactor productivity than do proportionate changes in the other inputs. Therefore, the modest 2.4-percent rate of growth in capital input from 1973 to 1988 was a major cause of the productivity slowdown, compared with the 1.6-percent growth achieved in output.

The precipitous fall in labor productivity growth of 6.4 percent per year from the pre-1973 period to the post-1973 period can be mathematically attributed to changes in other factors with respect to labor and to changes in multifactor productivity. The slowdown in output per hour coincided with slower growth in the capital-to-labor ratio and with absolute declines in the intensity of energy and materials inputs relative to labor. Half of the labor productivity slowdown is associated with declining multifactor productivity growth.

The measure of multifactor productivity presented in this article describes the relationship between real output and five major inputs involved in its production. Changes in this relationship, and thus in multifactor productivity, reflect the joint effects of many influences, including new technology, economies of scale, and changes in the efforts and characteristics of the work force. These effects are not measured separately here, but previous studies suggest that economies of scale are responsible for some of the increases in multifactor productivity in the electric utility industry.

Laurits Christensen and William Greene analyzed firm-level data for private electric utilities for the years 1955 and 1970.¹⁷ Focusing only on generation of electricity, they found that "in 1955 there were significant scale economies available to nearly all firms. By 1970, however, a large share of total electric power was generated by firms which had exhausted scale economies."¹⁸ Frank Gollop and Mark Roberts examined all operations of a subset of these same private electric utilities for the period 1958 to 1975 and concluded that there were scale economies available throughout their sample.¹⁹ They pointed out that this is not inconsistent with the findings of Christensen and Greene, because, "while economies in genera-

tion may well be exhausted at a relatively small scale of operation, engineering considerations suggest that significant economies persist in both transmission and distribution."²⁰

It is likely that scale economies are also associated with the transmission and distribution of natural gas. The fact that the price of natural gas for industrial use is much less than that for commercial or residential use implies that distribution costs decrease as consumption per customer increases. Historically, quantities of gas used by customers within each consumer category have increased, reducing distribution costs for the same reasons that industrial service costs less than residential service at a given point in time. Serving growing numbers of cus-

tomers may also provide opportunities to exploit scale economies.

Economies of scale have probably been realized by the utility services industries during part or all of the 1948-88 period. However, the framework within which multifactor productivity is measured in this article assumes *constant* returns to scale. Because of this assumption, multifactor productivity measures reflect scale effects, along with other sources of productivity growth. If, as some empirical evidence suggests, multifactor productivity benefited more from scale economies in the pre-1973 period than in the post-1973 period, this would explain part of the slowdown in its rate of growth.²¹ □

Footnotes

¹ The utility services industries are classified in Standard Industrial Classification (SIC) major industry group 49 and are engaged in the generation, transmission, and distribution of electricity; transmission and distribution (but not production) of natural gas; distribution of water; and collection and disposal of waste. Government-owned utilities are excluded from the new measure to maintain consistency with the BLS measure of multifactor productivity for the private business sector. See Executive Office of the President, Office of Management and Budget, *Standard Industrial Classification Manual* (Washington, U.S. Government Printing Office, 1987), p. 237.

² Indexes of output per hour and related measures for gas and electric utilities (SIC's 491, 492, and 493) appear in *Productivity Measures for Selected Industries and Government Services*, Bulletin 2406 (Bureau of Labor Statistics, April 1992).

³ This figure is the change in the rate of growth in output per hour worked from the 1948-73 period (2.5 percent per year) to the 1973-88 period (0.8 percent per year).

⁴ *Annual Energy Review, 1990* (Department of Energy, May 1991), Table 4, pp. 11-12. Data reflect the entire electric utility industry.

⁵ A BLS measure of multifactor productivity in the railroad transportation industry, also in the services sector, appears in *Productivity Measures for Selected Industries and Government Services*.

⁶ This definition of outputs and inputs in terms of transactions outside the sector will ultimately allow comparisons of productivity measures for different levels of aggregation, using a method proposed in E. D. Domar, "On the Measurement of Technical Change," *Economic Journal*, Vol. LXXI (December 1961), pp. 709-29. The definitions are consistent with the study of multifactor productivity in two-digit SIC manufacturing industries by William Gullikson and Michael Harper, "Multifactor productivity in U.S. manufacturing, 1949-83," *Monthly Labor Review*, October 1987, pp. 18-28.

⁷ This is the way construction is handled by the Bureau of Economic Analysis of the Department of Commerce in its input-output analysis.

⁸ A Tornqvist index is a discrete approximation to a Divisia index. W. E. Diewert has demonstrated ("Exact and Superlative Index Numbers," *Journal of Econometrics*, Vol. 4, No. 4, 1976, pp. 115-45) that the Tornqvist index is a "superlative index number formula," which means that it gives an accurate aggregate under fairly general conditions. According to Diewert, the Tornqvist index is "ex-

act" for a translogarithmic production function. In that case, sectoral output (Y) is produced at time t using inputs of capital (K), labor (L), energy (E), materials (M), and purchased business services (S); that is,

$$Y = f(K, L, E, M, S, t).$$

For further discussion of the multifactor productivity model, see *Trends in Multifactor Productivity, 1948-81*, Bulletin 2178 (Bureau of Labor Statistics, September 1983), pp. 33-34.

⁹ The multifactor productivity index may also be computed as the ratio of the index of sectoral output to the index of aggregate input, or Y/I .

¹⁰ The use of Tornqvist aggregation of outputs is consistent with a model of joint production in which "representative firms" choose how much of each output to produce based on maximization of profit, given exogenous output prices and a "transformation function." The properties of transformation functions are analyzed in W. E. Diewert, "Functional Forms for Profit and Transformation Functions," *Journal of Economic Theory*, 1973, Vol. 6, pp. 284-316.

¹¹ Output of water companies and companies offering other sanitary services is based on receipts data, which do not involve Tornqvist aggregation.

¹² See Federal Reserve System, Division of Research and Statistics, *Capacity Utilization, Manufacturing, Mining, and Utilities and Industrial Materials, January 1967-December 1984* (Washington, Board of Governors of the Federal Reserve System, July 1985); and *Industrial Production and Capacity Utilization* (Washington, Board of Governors of the Federal Reserve System, monthly press releases, June 1985-May 1989).

¹³ The capital input measure used here is a weighted aggregate of capital assets, where the weights are implicit rental prices of these assets. In the traditional framework for the measurement of multifactor productivity, capital inputs are assumed to be fully utilized, allowing capital stocks to be used as proxies for the flow of capital services. When the assumption of full capacity utilization does not hold, capital stock may no longer be a valid proxy for capital services. Two studies addressing this issue are Ernst Berndt and Melvyn Fuss, "Productivity Measurement with Adjustments for Variations in Capacity Utilization and Other Forms of Temporary Equilibrium," and Charles Hulten, "Productivity Change, Capacity Utilization, and the Sources of Efficiency Growth," both of which

appeared in the *Journal of Econometrics*, Vol. 33, Oct.-Nov. 1986. These analyses show that variations in capacity utilization are captured in multifactor productivity measures through the use of an ex post rental price in the weight on capital input. The ex post rental price of capital would decrease when capacity was underutilized, and, compared with the traditional measure, multifactor productivity growth would be increased. Since the Bureau uses an ex post procedure in computing the rental price of capital, the effect of variations in capacity utilization on the capital or multifactor productivity measures may, to some extent, already have been captured. For further discussion, see Susan Powers, *Cyclical Movements in BLS Multifactor Productivity Measures and Capacity Utilization*, Working Paper 198 (Bureau of Labor Statistics, August 1989).

¹⁴Starting with

$$\Delta \ln A = \Delta \ln Y - w_K \Delta \ln K - w_L \Delta \ln L \\ - w_E \Delta \ln E - w_M \Delta \ln M - w_S \Delta \ln S,$$

to both sides we add $\Delta \ln Y$, subtract $\Delta \ln A$, and multiply by -1 to obtain

$$\Delta \ln Y = \Delta \ln A + w_K \Delta \ln K + w_L \Delta \ln L \\ + w_E \Delta \ln E + w_M \Delta \ln M + w_S \Delta \ln S.$$

Subtracting $\Delta \ln L$ (in the form $(w_K + w_L + w_E + w_M + w_S) \Delta \ln L$, with $(w_K + w_L + w_E + w_M + w_S)$ equal to 1 on the right side) yields

$$\Delta \ln Y - \Delta \ln L = \Delta \ln A + w_K \Delta \ln K \\ + w_L \Delta \ln L + w_E \Delta \ln E + w_M \Delta \ln M \\ + w_S \Delta \ln S - (w_K + w_L + w_E + w_M + w_S) \Delta \ln L,$$

or

$$\Delta \ln Y - \Delta \ln L = \Delta \ln A + w_K (\Delta \ln K - \Delta \ln L) \\ + w_E (\Delta \ln E - \Delta \ln L) + w_M (\Delta \ln M - \Delta \ln L) \\ + w_S (\Delta \ln S - \Delta \ln L),$$

where the left side is equivalent to labor productivity growth and the terms on the right side represent multifactor productivity growth and changes in the ratios of each nonlabor factor to labor multiplied by that factor's average share in income.

¹⁵The contribution of a factor's intensity to growth in output per hour is defined as the factor's cost share times the growth rate of the ratio of the factor's quantity to labor hours. This is not a causal explanation of growth in output per hour, as noted by Michael Harper and William Gullikson in "Cost Function Models and Accounting for Growth in U.S. Manufacturing, 1949-86," presented at the National Bureau of Economic Research Summer Institute, July 24-28, 1989.

¹⁶The rate of growth in productivity of natural gas used as a material increased from 2.0 percent per year in the 1948-73 period to 4.8 percent per year during 1973-88. Productivity growth of other materials fell from 5.0 percent per year prior to 1973 to -3.0 percent per year in the post-1973 period.

¹⁷Laurits Christensen and William Greene, "Economies of Scale in U.S. Electric Power Generation," *Journal of Political Economy*, Vol. 84 (August 1976), pp. 655-76.

¹⁸Christensen and Greene, "Economies of Scale," p. 656.

¹⁹Frank Gollop and Mark Roberts, "The Sources of Economic Growth in the U.S. Electric Power Industry," in Thomas Cowing and Rodney Stevenson, eds., *Productivity Measurement in Regulated Industries* (New York, Academic Press, 1981), pp. 107-43.

²⁰Gollop and Roberts, "Sources of Economic Growth," p. 127 (footnote 23).

²¹Gollop and Roberts, *ibid.*, p. 140, estimated that, for selected electric utilities, the average annual change in productivity growth due to scale economies was 1.8 percent from 1958 to 1973 and -0.1 percent during the 1973-75 period.

APPENDIX: Data sources and methods

Following are discussions of the data and methods used to develop indexes of each major input and each type of output. In some instances, data for more than one three-digit industry must be processed together, and the methodology is presented jointly.¹ For example, the best available data on electricity sales include sales of electricity by combination electric and gas companies. Similarly, sales of gas by combination utilities are included in the data on gas sales. Thus, measures developed separately for electric utilities and gas utilities, when summed, encompass SIC industries 491 through 493. In general, no problem is presented by source data that overlap three-digit industries, because such data are aggregated to the two-digit level.

Output measures

In 1988, the value of sectoral output for privately owned utilities was approximately \$200 billion. Seventy percent (\$140 billion) was accounted for by electricity services, 20 percent (\$40 billion) by gas services, and 10 percent (\$20 billion) by all other utility services combined.

Electric services. Electricity output is measured in

kilowatthours. Because the utilities are engaged in distribution as well as generation of electricity, output is based on kilowatthours sold to ultimate consumers, not kilowatthours generated. Although electricity would seem to be homogeneous, consideration of the distributive service reveals differences in the product provided to various types of customers. In many cases, industrial customers receive larger amounts of electricity at higher voltage, and therefore lower unit cost, than do residential customers; the unit cost of distribution is inversely related to the quantity supplied. For this reason, most electric utilities employ a rate structure distinguishing several classes of service. In the aggregation of electric services output, kilowatthours sold to each class of service are weighted by the price of that service, in order to value the several types of output according to their relative unit costs.

The cost of generating electricity at a given plant varies with the time of day and season of the year. It is generally higher during a peak load period, primarily because equipment that is less efficient due to age or because it requires a more expensive type of fuel may be called into service. Industrial customers are sometimes able to pay lower rates by scheduling work to take advantage of offpeak prices, but resi-

dential customers are not generally offered this option and, in any event, cannot schedule consumption to take advantage of such discounts. This source of disparity between the average prices paid by residential and industrial customers is also reflected in the output series, via smaller price weights applied to industrial consumption. Similarly, lower rates resulting from long-term contracts are captured in the output measure.²

The price-weighted electric services output measure reflects variable distribution costs, as well as rate differences among classes of service that are related to the cost of generation of electricity. The measure prevents bias in productivity measures due to changes in the distribution of sales among classes of service. For example, if output were defined as unweighted kilowatt-hour sales, productivity gains would be inferred incorrectly if consumption shifted toward the low-cost industrial service.³

The development of output is made possible by excellent source data. The Energy Information Administration of the Department of Energy publishes electricity sales and revenues by class of service for "selected investor-owned electric utilities."⁴ These data cover practically all of the privately owned electric utility industry, with which we are concerned. Cooperatively owned electricity production is reported by the Department of Agriculture's Rural Electrification Administration and is used to supplement the Department of Energy data.⁵

Purchases of electricity by Federal and municipal electric utilities from private electric utilities should be included in output. However, these transactions are excluded therefrom in this study, along with sales between private electric utilities, because sales for resale are reported in total by the Department of Energy. Related published data indicate that in 1985, these sales were at most 6.4 million megawatt-hours of the 337.1 million megawatt-hours sold for resale by private utilities.

Gas production and distribution. By definition, gas utility services include the transmission, storage, and distribution of all gas, as well as the production of manufactured, mixed, and liquefied petroleum gas.⁶ As a statistical matter, gas services output is approximated by gas sales to ultimate consumers. Natural gas sales currently account for 99 percent of all gas sales to final consumers and are therefore virtually equal to output. During 1947, the figure was 87 percent, with manufactured gas accounting for 8 percent and mixed gas for 5 percent of sales. However, by 1955, manufactured gas production was less than 1 percent of output, and the share of natural gas had climbed to 95 percent. The remainder was mixed gas, production of which plummeted shortly thereafter. Liquefied petroleum gas has never been important statistically in aggregate industry data.

It is the distributive aspect of gas service that gives rise to the large differences in rates facing various categories of customers; gas utilities have not produced substantial amounts of gas for decades.

As in the case of electric utility service, the quantity of sales in each category is weighted by its revenues, yielding an index of output that recognizes the different costs of distribution. Sales and revenue data for residential, commercial, industrial, and other customers for the period 1947-89 are available through the American Gas Association.⁷

Because the gas output series is but a constituent of a sectoral output series for all utility services, sales of gas to electric utilities must be removed from output. Sales of gas for the generation of electricity, together with corresponding revenues, are included in the "industrial" and "other" categories of the American Gas Association data. They are also reported separately and so may be deducted from these categories of sales and revenues prior to aggregation of output. Analogously to the case of electricity output, purchases of gas by publicly owned electric utilities should be included in output, but are removed along with the much larger amounts of gas sold to privately owned electric utilities.

Gas sold by municipally owned gas companies is included in the source data and must also be removed from output to be consistent with the restriction of this measure to privately owned utilities. Data on recent sales and revenues are reported by type of ownership in *Gas Facts*, and additional data are available from the American Gas Association. Data on municipal gas sales have been provided for 1974 through 1989 and corresponding revenues from 1980 forward. Prior to 1974, municipal gas sales could be derived by deducting sales by private gas companies from sales by all gas companies. Moreover, the details by class of customer during 1974-84 revealed that the distribution of total municipal gas sales among the four service classes was nearly constant over the period. The total municipal sales in each year from 1948 to 1973 were distributed on the basis of the average percent distribution from 1974 to 1984. Finally, sales by class of service were multiplied by the average price of all gas sales by class, and both sales and revenues of the municipal gas companies were subtracted from output.

Ideally, electricity and gas sales to privately owned companies dealing in water and sanitary services would be excluded from the output measure. Data for private companies are not reported separately from sales to publicly owned firms, which account for a large majority of such transactions.⁸ Electricity and gas consumed by private water and sanitary services companies is not deducted, but the overstatement of output is insignificant. For example, the total water and sanitary services industry consumption of electricity and gas of \$12.7 million in 1972 was just 0.03 percent of the \$37.446 billion in sectoral output of the private utilities services industry.⁹

Water supply and sanitary services. The Internal Revenue Service publishes estimated business receipts by corporations for water, sanitary services, steam, and irrigation services (SIC industries 494 through 497).¹⁰ Actually, data for 1947 through

1957 cover water services only, but all of the preceding are reflected in data from 1958 to 1988. The data are based on income tax returns of a sample of corporations that changes from year to year. Similar treatment is given to returns by partnerships and sole proprietors, but the results are not reported separately for water and sanitary services. These current-dollar receipts data are deflated using the implicit price deflator for private consumption of water and sanitary services developed by the Bureau of Economic Analysis.¹¹ The constant-dollar revenue series is then indexed and used to complete the aggregation of total utility services output. The Internal Revenue Service data do not permit subtraction of intraindustry consumption of water and other sanitary services. However, in 1972, electric and gas utilities purchased less than 1 percent of water and other sanitary services output.¹²

Input measures

Capital input. Capital input is defined as the flow of services from the capital stock and is assumed to be proportional to that stock. Utility industry capital stock includes equipment, structures, and land. Data on investment in these capital assets are published by the Bureau of Economic Analysis for several two-digit SIC industries, including SIC 49.¹³ The Bureau of Labor Statistics has developed capital stock measures for the depreciable assets (equipment and structures) of these industries by applying the perpetual inventory method to the Bureau of Economic Analysis investment data. This method involves the assumption that the efficiency of assets deteriorates with age. In particular, it is assumed that efficiency declines slowly in the early years of an asset's life and more rapidly later on. Inventories are based on estimates from the Bureau of Economic Analysis. Land is estimated as described in an unpublished BLS manuscript.¹⁴

Source data for 17 distinct types of capital assets contribute to the capital stock measure for SIC 49. Stocks of the several assets are combined using weights derived from estimates of implicit rental prices—the prices that the various types of capital would bring on a hypothetical rental market. These rental price estimates are calculated as the rate of return on the assets, plus the rate of depreciation, minus capital gains, all in nominal terms. Tornqvist aggregation over the individual assets yields a quantity index and price series for real capital input that may be used in the multifactor framework.¹⁵

Labor input. The unit of measure of labor input is the paid hour. In this study, no attempt is made to adjust for changes in labor composition. The scope of labor input is limited to operations and maintenance workers, with the intention of excluding any labor devoted to new construction. This is consistent with the definition of output as sales by utilities, rather than a broader concept that includes structures completed or in progress. Studies of multifactor productivity growth are thereby confined to the

primary function of utilities, namely, the provision of electric, gas, water, or other services. This is a significant matter in the electric utility industry, because a quarter of its employees are construction workers. Thus, a desirable characteristic for source data for labor input is that such data distinguish these workers from the rest.

Sources of employment data for electric utilities are the statistical yearbooks of Edison Electric Institute and the Rural Electrification Administration.¹⁶ The Edison Electric yearbook breaks out employment data into operations, maintenance, and construction workers and covers 98 percent of private industry. Edison Electric employment data extend back to 1951, and percent changes in employment in SIC 491, available from the BLS establishment survey, were used to move the Edison Electric series from 1951 back to 1947.¹⁷ The Rural Electrification Administration reports only full-time employment, and this series is added directly to the Edison Electric series. Thus, it is assumed that no full-time construction workers are employed by Rural Electrification Administration borrowers.

The source data for employment in the gas utility industry are not well suited to distinguishing construction workers. Employment at private gas utilities is reported in *Gas Facts*, beginning in 1972. Construction workers are included in the total, but are not reported separately. It was possible to extend this series back to 1947 using employment in the total gas industry, which is reported for the entire study period by the American Gas Association. This left the matter of estimating and subtracting out construction labor. The American Gas Association reports payroll data broken out into operations, construction, and miscellaneous categories, starting with 1971 for the investor-owned part of the industry and with 1947 at the total industry level.¹⁸ By assuming that wages of gas utility construction workers are competitive with those of the contract construction workers in SIC 162, which includes the building of gas pipelines, an estimate of employment in the private gas utility construction industry was derived back to 1972, the first year for which average weekly earnings for SIC 162 are reported by the Bureau of Labor Statistics in *Employment, Hours, and Earnings*. Subtraction of this series from the total employment series yields estimated nonconstruction employment for 1972-89. An alternative estimate of nonconstruction employment was then calculated under the assumption that construction workers in gas utilities earn the average wage for the gas utilities industry. In this manner, total employment could be distributed between the construction and nonconstruction parts of the industry in the same proportion as payroll in the industry is distributed. The method produced a series that moves in the same direction as the first estimated nonconstruction employment series in every year. We used movements in the latter series to complete the measure of nonconstruction employment in investor-owned gas utilities because that series covers a longer period than the other does.¹⁹

Employment in the other utility services, encom-

passing SIC industries 494 through 497, was found as the residual of employment in SIC 49 less employment in SIC industries 491 through 493. All of the required data appear in *Employment, Hours, and Earnings*, except for employment in SIC 492 and SIC 493 during 1947-49.²⁰ Stable employment trends during the early 1950's were utilized to estimate employment figures for the years 1947-49.²¹ In the absence of evidence of construction labor in SIC's 494 through 497, it has been assumed that there is none there. Employment in SIC industries 494 through 497 is very small relative to that in electric and gas utilities (about 10 percent, on average, of the total for SIC 49), so that a fairly stable proportion of employees devoted to construction would not significantly affect the two-digit labor input trend.

Employment must be multiplied by average weekly hours and 52 weeks per year to find hours, the unit of measure of labor input. *Employment, Hours, and Earnings* also contains the data on average weekly hours used in this article.²² Average weekly hours of nonsupervisory workers are reported by three-digit SIC industry, with data beginning in 1947 for SIC 491 and in 1950 for SIC 492 and SIC 493. These three industries combined cover all the private electric and gas utilities. Because the employment data for electric and gas utilities were developed separately, and because SIC 492 includes both electric and gas utilities, average weekly hours could not be applied at the three-digit level. Therefore, an average weekly hours series for SIC industries 491 through 493 combined was derived.

Average weekly hours for SIC 491 through SIC 493 combined were found by first multiplying average weekly hours by employment in each industry, where these data refer to nonsupervisory workers. Then the results were summed over the three industries. The sum was subsequently divided by the sum of nonsupervisory employment to get an average weekly hours figure for electric and gas utilities together. It was necessary to assume that average weekly hours in SIC 492 and SIC 493 were the same in 1947-49 as they were in 1950. Hours in electric and gas utilities are, then, the product of their summed employment, this combined average weekly hours series, and 52 weeks per year.

Hours for the remaining industries in SIC 49 were found as the residual of total employee hours in SIC 49 less total employee hours in SIC 491 through SIC 493. It was necessary to estimate average weekly hours in SIC 49 for the 1947-57 period using forecasting methods and data at the three-digit level.²³ The hours series thus obtained for SIC 494 through SIC 497 is based entirely on published data. Unpublished BLS data also permit direct calculation of hours for SIC industries 494 through 497 back to 1972. Differences between the two alternative series since 1972 are very small. Since the series estimated using published data would have to be used for years prior to 1972 in any case, it is used for the entire 1947-89 period. This series was then added to the nonconstruction worker hours series for SIC 491 through SIC 493 to complete the labor input series.

Weights for the labor input series are based on

current-dollar payments to labor. The Bureau of Economic Analysis provides labor compensation data by two-digit industry wherein both wages and supplements to wages contribute to total compensation.²⁴ Total labor compensation is appropriate for use in the multifactor productivity framework, to account for all costs of production. After the labor input series is indexed, compensation in current dollars is divided by the index to get the corresponding series of prices.

Energy input. Electric utilities accounted for 85 percent of expenditures on energy input by SIC industry group 49 in 1960, 90 percent in 1970, and 92 percent in 1980. Energy input to electric utilities consists primarily of fossil fuels burned to drive electricity-generating plants. Electric utilities also produce electricity from water and wind and from solar and geothermal power. Accordingly, these are energy inputs, too. On the other hand, electricity is produced using nuclear fuel, yet nuclear fuel is included in capital input. The reason is that the long useful life of this energy source, about 5 years, suggests treating it as a depreciable capital asset.

The fossil fuels used to generate electricity are coal, oil, and gas. The treatment of coal and oil input is straightforward: the quantities consumed and prices paid for these two fuels by the electric utilities are incorporated into aggregate energy input. Technically, gas purchases by electric utilities from gas pipeline companies and gas distributors are excluded from energy input because these are *intraindustry* transactions. However, these amounts of gas are properly included in energy input as *interindustry* sales from SIC 13 to SIC 49. Therefore, the quantity of gas consumed by electric utilities is included in energy input, but valued at the price paid to the gas producers in SIC industry 13.

The Energy Information Administration of the Department of Energy is able to provide data on quantities of coal, oil, and natural gas consumed by privately owned electric utilities from 1970 on.²⁵ These three series were extended back to 1947, based on closely related information available in the Edison Electric Institute statistical yearbook.²⁶ There, one finds data on the consumption of fossil fuels by all electric utilities for the entire period of the study. Quantities of electricity generated, by type of ownership and by type of prime mover driving the generator, are also reported back to 1947. This article uses electricity generation driven by conventional (as opposed to nuclear) steam engines and turbines and by internal combustion engines, because these are the prime movers that consume fossil fuels. The data were utilized as follows: the ratio of fossil fuel-powered generation at private electric utilities to that at all electric utilities was multiplied by the consumption of each fossil fuel by all electric utilities, giving estimated private fuel consumption. Estimated values for 1970-88 were compared with actual fuel consumption data provided by the Energy Information Administration, and the ratio of actual to estimated consumption of each fuel in 1970 was used to scale the estimated series prior to 1970.

Current-dollar costs are calculated for coal and oil as the product of consumption and average prices paid by electric utilities. The quantities of gas used are valued at the price originally paid to the producers of the gas by the pipeline companies. This price is available from 1958 on, and before that, the price of all marketed production serves as a good proxy. Price data are published in *Monthly Energy Review* by the Department of Energy.²⁷

Natural gas that is transported through gas pipelines and utilities to final consumers outside SIC 49 is included in materials input, not energy input. But the smaller amounts used by the utilities themselves are energy input. Natural gas used for the purpose of generating electricity is discussed above. Gas is also used by gas utilities in the operation of pipelines, primarily for compressors, and must be included in fuel input. *Natural Gas Annual* reports the amounts of gas used for this purpose from 1947 on and corresponding prices from 1967 on.²⁸ Here again, the price of marketed production is used from 1947 to 1957. The price of pipeline fuel from 1958 to 1966 is reported in the *National Energy Accounts Data Base*, available from the Department of Commerce.²⁹ This is also the source of data on prices and quantities for other fossil fuel consumption by electric and gas utilities, such as gasoline for cars and trucks, and for water and geothermal power used by electric utilities.³⁰

Energy input for the remaining utility services industries is provided in the *National Energy Accounts Data Base*.³¹ The data are organized primarily by Bureau of Economic Analysis input-output industry, but a single industry classification—water supply and sanitary services—corresponds to SIC industries 494 through 497. The substantial detail describes how each of several types of fuel was used; the quantities used, in physical units; and the cost, in both current and constant dollars. Eight different petroleum products are Tornqvist aggregated to get the fuel input to SIC industries 494 through 497.

However, the *National Energy Accounts Data Base* reflects energy consumption by both private and government water and sanitary services providers, the majority being government. It is therefore necessary to adjust this component of energy input. The ratio of employment by private water and sanitary services companies to employment at all water and sanitary services companies is taken as an indicator of the portion of energy consumption attributable to the private firms. The development of data on private employment based on published BLS data has been described previously. Data on government employment in water and sanitary services are available from the Bureau of the Census.³² The ratio of private to total employment increases throughout the 1958-88 period, from 11 percent to 26 percent. The ratio series is multiplied by the price series for energy consumed by all water and sanitary services companies. The index of the quantity of energy consumed by all water and sanitary services companies is retained, while price and, therefore, total cost are adjusted to a level consistent with services provided by private firms, as suggested by employment figures.

Data from the *National Energy Accounts Data Base* are currently available for 1958 through 1985. The ratio of energy cost including these data to energy cost excluding them in 1958 was multiplied by the energy cost for electric and gas utilities from 1947 to 1957 to estimate total energy costs. Similarly, the ratio in 1985 was applied in the period 1986-88. The adjustment is necessary to give energy input the appropriate weight in the aggregation of total input. It does not affect the energy input quantity index during the years 1947-57 or 1986-88, but is reflected in the series of energy input prices.

Materials input. Materials input is developed in two parts: natural gas used as a material rather than a fuel and all nongas materials. These components are combined to get total materials input. The natural gas used as a material input accounts for the majority of materials input cost and, therefore, dominates movements in the total series. This is especially true after 1973, due to the increased price of natural gas.

Gas purchased by SIC 49 is included in fuel input only if it is burned to produce heat or power. Gas destined for final consumption outside SIC 49 belongs in the materials input measure. Thus, gas used as materials input is equal to gas acquired by gas utilities, plus net withdrawals of gas previously stored, less amounts consumed within SIC 49. The American Gas Association provides all of the quantity data used in the calculation of gas materials input.³³ These data are consistent with the association's sales data, which are the basis for gas utility output data. From the total supply of gas utilities, which includes net withdrawals from storage, the amount of gas used as a fuel by electric utilities and by gas utilities is subtracted.³⁴ Amounts of gas ultimately sold to municipal gas companies are also subtracted, which is consistent with removal of municipal sales from output. Price series that are precisely applicable to each of the quantity series or other, proxy price series are published by the Department of Energy.³⁵

The quantity and cost series for nongas materials are constructed on the basis of a series of annual input-output tables developed by BLS, using tables from the Bureau of Economic Analysis as benchmarks.³⁶ Because the BLS tables cover only 1947 and the period 1958-88, it was necessary to interpolate between 1947 and 1958. Current dollar cost data were used to find shares in income in 1947 and for 1958 on, and then income shares for 1948-57 were interpolated using the simple straight-line method. Quantities of each item included in materials were interpolated for the 1948-57 period. Next, total nongas materials were derived as a weighted sum of these estimated quantities. The weights were based on the estimated current-dollar expenditures on each item, derived by reflatting the estimated quantities. Purchases of higher priced inputs are thereby weighted more heavily, as is appropriate for this purpose. Growth rates in the aggregate constant-dollar series are used to derive quantity indexes, and dividing these into current-dollar totals produces series of prices required for Tornqvist aggregation.

Multifactor Productivity in Utility Services

The indexes and price series for the two parts of materials input are combined prior to aggregation of total input. Thus, the results presented above refer to the combined series.

Business services input. The development of a series for business services input to SIC 49 is analogous

to that for nongas materials. Services inputs shown in the BLS input-output tables are aggregated using the same methods. Data had to be estimated for 1948-57, and this was done in the same way. Aggregation of services input differs from that of nongas materials input only in the set of input-output industries whose products are included.³⁷

Footnotes to the appendix

- ¹ There are seven three-digit utility services industries:
 - 491 Electric services
 - 492 Gas production and distribution
 - 493 Combination electric and gas, and other utility services
 - 494 Water supply
 - 495 Sanitary services
 - 496 Steam supply
 - 497 Irrigation systems
- ² J. M. Gould, *Output and Productivity in the Electric and Gas Utilities: 1899-1942* (National Bureau of Economic Research, 1946).
- ³ Yoram Barzel, "Productivity in the Electric Power Industry, 1929-1955," *Review of Economics and Statistics*, November 1963.
- ⁴ Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels, *Statistics of Privately Owned Electric Utilities (Classes A and B Companies)* (Washington, Department of Energy, published annually).
- ⁵ "Composite Revenues, Number of Customers, and Kilowatt-Hour Sales Reported by REA Borrowers Operating Distribution Systems," *Statistical Report, Rural Electric Borrowers* (Washington, Department of Agriculture, Rural Electrification Administration). (See also technical supplement.)
- ⁶ Executive Office of the President, *Standard Industrial Classification Manual*.
- ⁷ American Gas Association, *Gas Facts* (New York, American Gas Association, Inc., published annually).
- ⁸ In 1989, 85 percent of water utility operating expenses were accounted for by publicly owned water utilities, according to *Environmental Investments: The Cost of a Clean Environment*, Report of the Administrator of the Environmental Protection Agency to the Congress of the United States, EPA-230-11-90-083 (Washington, Environmental Protection Agency, November 1990). Moreover, employment by private water and sanitary services companies never accounted for more than one-quarter of total water and sanitary services employment during the period of study, based on the labor input series and data from Bureau of the Census, *Public Employment* (Washington, Department of Commerce, annual issues, 1959-88).
- ⁹ Bureau of Economic Analysis, *The Detailed Input-Output Structure of the U.S. Economy: 1972, Volume I: The Use and Make of Commodities by Industries* (Washington, Department of Commerce, 1979).
- ¹⁰ Internal Revenue Service, *Statistics of Income . . . 1988, Corporation Income Tax Returns* (Washington, Department of the Treasury, 1991).
- ¹¹ "Implicit Price Deflators for Personal Consumption Expenditures by Product: Annually, 1929-76," *The National Income and Product Accounts of the United States, 1929-76 Statistical Tables* (Bureau of Economic Analysis, September 1981), pp. 348-52; and "Implicit Price Deflators for Personal Consumption Expenditures by Product," *Survey of Current Business* (Washington, Department of Commerce, July issues, 1982-89).
- ¹² Bureau of Economic Analysis, *The Structure of the U.S. Economy*, p. 163.
- ¹³ Bureau of Economic Analysis, "Fixed Private Capital in the United States," *Survey of Current Business* (Washington, Department of Commerce, July 1985), pp. 36-59.
- ¹⁴ Steven Rosenthal, *Problems in the Measurement of Land*.
- ¹⁵ See William Gullickson and Michael Harper, "Multifactor productivity in U.S. manufacturing, 1949-83," *Monthly Labor Review*, October 1987, pp. 18-28.
- ¹⁶ Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry* (Washington, Edison Electric Institute, published annually); Rural Electrification Administration, *Statistical Report, Rural Electric Borrowers* (Washington, Department of Agriculture, published annually).
- ¹⁷ *Employment, Hours, and Earnings, United States, 1909-90, Volume II* (Bureau of Labor Statistics, March 1991), p. 720.
- ¹⁸ American Gas Association, *Gas Facts*.
- ¹⁹ See technical supplement to *Multifactor Productivity in Utility Services Industries*, unpublished BLS report.
- ²⁰ *Employment, Hours, and Earnings*, pp. 719-28.
- ²¹ See technical supplement to *Multifactor Productivity in Utility Services Industries*.
- ²² *Employment, Hours, and Earnings*, pp. 719-28.
- ²³ See technical supplement to *Multifactor Productivity in Utility Services Industries*.
- ²⁴ Bureau of Economic Analysis, "Table 6.4B-Compensation of Employees by Industry: Annually, 1948-82," *The National Income and Product Accounts of the United States, 1929-82, Statistical Tables* (Washington, Department of Commerce, September 1986).
- ²⁵ Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternate Fuels, *Monthly Report for Electric Utilities R002, Fuel Consumption and Stock (II)* (Washington, Department of Energy, 1990).
- ²⁶ Edison Electric Institute, *Statistical Yearbook*.
- ²⁷ Energy Information Administration, Office of Energy Markets and End Use, *Monthly Energy Review* (Washington, Department of Energy, published monthly).
- ²⁸ Energy Information Administration, Office of Oil and Gas, *Natural Gas Annual* (Washington, Department of Energy, 1982-89).
- ²⁹ Office of Business Analysis, Under Secretary for Economic Affairs, *National Energy Accounts Data Base* (Washington, Department of Commerce, February 1985).
- ³⁰ Office of Business Analysis, *National Energy Accounts*.
- ³¹ *Ibid.*
- ³² Bureau of the Census, *Public Employment* (Washington, Department of Commerce, 1959-88), annual issues.
- ³³ American Gas Association, *Gas Facts*.
- ³⁴ Technically, gas used for fuel by water and other sanitary services industries should be deducted from total supply in this derivation of gas materials input. However, analogously to the development of energy input, this would be accomplished by applying a ratio based on 1958-85 *National Energy Accounts* data to the entire gas materials input

series. Because the amounts involved are not significant (the 1985 ratio would be 0.997), this approach has been avoided.

³⁵Energy Information Administration, *Natural Gas Annual*.

³⁶Input-output tables are available for the years 1947, 1958, 1963, and every year between 1967 and 1980. BLS modifies the published tables for mutual consistency and to reflect establishment output concepts; for those years that lack published tables, estimates are obtained by interpolation using annual control totals for gross output, final de-

mand, and value added. See, for example, Bureau of Economic Analysis, *The Detailed Input-Output Structure of the U.S. Economy, 1977, Volume 1, The Use and Make of Commodities by Industries* (Washington, Department of Commerce, 1984).

³⁷Services consist of communications; finance and insurance; real estate rental; hotel services; repair services; business services, including equipment rental, engineering and technical services, and advertising; vehicle repair; medical and educational services; and purchases from government enterprises.

Decade of children and the family

It is vexing to see decades labeled according to a single mood—the swinging sixties, the greedy eighties. The shift of a digit on the calendar year can hardly cause such a profound swing in the national psyche, only a fraction of the population. Nevertheless, the 1990s will be dedicated in a major way to children and family because family life will be at its peak for the most influential generation in the population—influential by virtue of its size and now aging into positions of influence. This shift cannot help but influence fertility decisions at the margin. Thus, other things being equal, we will probably see a somewhat higher fertility rate. How high cannot be predicted, but it will probably not be very much higher than the 2.2 in the high-fertility projection series, since the opportunity costs of having children are more likely to increase than to decrease.

—Martha Farnsworth Riche

“Demographic Change and the
Destiny of the Working-Age Population.”
*As the Workforce Ages: Costs, Benefits &
Policy Challenges*, Olivia S. Mitchell, editor.
(Ithaca, NY, ILR Press, School of Industrial
and Labor Relations, Cornell University, 1993), p. 24.

Research summaries



Producer prices in 1992 held down by productivity gains

Craig Howell, William Thomas, Harry Briggs, and Scott Sager

Prices received by domestic producers of finished goods moved up 1.6 percent from December 1991 to December 1992 after inching down 0.1 percent in calendar year 1991. Outside of the often volatile food and energy sectors, however, prices for finished goods advanced 1.9 percent, well below the 3.1-percent rise in 1991.

At earlier stages of processing, the Intermediate Goods Price Index rose 1.1 percent in 1992 in the wake of a 2.6-percent decrease the year before. The Crude Goods Price Index increased 2.9 percent from December 1991 to December 1992, following a drop of 11.6 percent during the preceding year. Energy prices turned up modestly at both the intermediate and the crude levels after double-digit declines in 1991. Crude foodstuff prices also moved up after falling a year earlier. Industrial material prices turned up at both the intermediate and the crude stages of processing. (See table 1.)

Price increases for many items included in the Producer Price Index (PPI) system were slower in the second

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half of the year than in the first. The increase in the Finished Goods Price Index, for example, slowed from a seasonally adjusted annual rate of 2.6 percent in the first 6 months of 1992 to a rate of 0.5 percent in the last 6 months of the year. The so-called "core" or "underlying" rate of inflation (that is, for finished goods other than foods and energy) reflected the same pattern, rising at an annual rate of 2.7 percent from December 1991 to June 1992, followed by a 1.0-percent rate of advance from June to December 1992. The index for finished energy goods, which had risen at an annual rate of 7.4 percent in the first 6 months of the year, fell at about the same pace in the second half. Consumer food prices, however, turned up from June to December after easing down slightly in the preceding 6 months.

Industrial material prices also tended to move up more rapidly in the first 6 months of 1992 than in the rest of the year. The index for intermediate materials less foods and energy edged up at a rate of 0.5 percent in the second half, less than the first-half rate of 1.8 percent. Prices for both durable and nondurable manufacturing materials turned down in the second half after first-half increases. The rise in the index for basic industrial materials slowed to a seasonally adjusted annual rate of 1.9 percent from June to December after climbing at a rate of about 10 percent in the preceding 6 months.

Although the recession that had begun in July 1990 had officially ended by the spring of 1991, the recovery for the rest of that year and through most

for of 1992 was uncharacteristically sluggish, compared with previous periods of recovery. It was not until the end of 1992 that the gross domestic product reached the same level as it had attained just prior to the start of the recession.

Personal consumption expenditures on goods and services were restrained by the need of consumers to reduce their unusually high debt burdens in the aftermath of intense borrowing during the 1980's. The failure of employment to rebound significantly during the recovery further served to hamper consumer spending. Nevertheless, consumer spending strengthened considerably in the second half, partly at the expense of savings. Capital investment plans were held in check by unused capacity in many sectors. Export demand was less buoyant in 1992 than in other recent times, largely because many of our major trading partners were also struggling with recession or low growth. The housing sector was again relatively strong; however, the commercial construction sector remained depressed in the aftermath of serious overbuilding in the mid-1980's.

Inflation usually continues to decelerate even well after a recession ends because output normally expands at a faster pace than employment during the early stages of recovery. This results in sizable productivity gains and lower unit labor costs. The unusually slow growth in employment from the March 1991 trough of the recession through the end of 1992 amplified this tendency. This factor was particularly important for finished goods, because

Table 1. Annual percent changes for major categories of the Producer Price Index by stage of processing, 1988-92

Index	1988	1989	1990	1991	1992
Finished goods	4.0	4.9	5.7	-0.1	1.6
Foods	5.7	5.2	2.6	-1.5	1.5
Energy	-3.6	9.5	30.7	-9.6	-1
Other	4.3	4.2	3.5	3.1	1.9
Intermediate materials, supplies, and components.....	5.6	2.3	4.3	-2.6	1.1
Foods and feeds.....	10.8	0	-1.3	-2	-5
Energy	-4.4	10.6	21.8	-11.6	1.8
Other	7.2	.9	1.9	-8	1.1
Crude materials for further processing	3.1	7.1	6.0	-11.6	2.9
Foodstuffs and feedstuffs	14.2	2.8	-4.2	-5.8	2.8
Energy	-9.5	17.9	19.1	-16.6	1.5
Other	7.5	-3.6	.6	-7.6	5.6

NOTE: Data are calculated on a December-to-December basis.

labor costs are a more critical determinant of the rate of price change for goods at the later stages of processing than for goods that are less processed. Productivity for nonfarm businesses as a whole grew 2.7 percent in 1992, far better than the 0.5-percent rise measured in 1991 and the highest increase for any calendar year since 1972.

The weakness in prices for many kinds of industrial materials during 1992 was somewhat puzzling in a historic perspective. These prices are usually considered a sensitive leading indicator of the status of the general economy. But while most other sensitive economic indicators were pointing towards a strengthening economy by the end of the year, material prices were often far stronger in the first half of the year than in the second. If the economy does in fact continue to improve through 1993, it may be a sign that material prices are currently being driven more by their own special supply situations (for example, by the heavy sales of nonferrous metals from areas in the former Soviet Union) than by shifts in general economic demand. If, however, the economy once again falters, this may indicate that movements in material prices remain a viable prognosticator of the future health of the economy.

Core rate of inflation

Prices received by domestic producers for finished goods other than foods and energy moved up 1.9 percent in 1992, the smallest advance for any calendar year since 1983. The trend towards slower annual increases in the core rate of inflation has been evident each year since the late 1980's:

	PPI core rate
1988	4.3
1989	4.2
1990	3.5
1991	3.1
1992	1.9

A similar pattern was exhibited for several years during the much stronger recovery from the recession that ended in late 1982. The fact that the core rate rose more slowly during the second half of 1992, when the recovery was more pronounced, than in the first 6 months of the year further indicates the compatibility of low inflation and recovery.

Thus, the low rate of inflation in the core rate for 1992 cannot be attrib-

uted solely to broad economic sluggishness. By the same token, continuation of a low rate of inflation would not necessarily be jeopardized by a more vigorous expansion in 1993.

Each of the three major stage-of-processing groupings making up the core rate—consumer nondurables other than food and energy, consumer durables, and capital equipment—rose less in 1992 than they had in the preceding year. A sizable slowdown in the rate of increase for tobacco products was responsible for much of the deceleration in the index for consumer nondurables other than foods and energy. The slowdown for both consumer durables and capital equipment was led by passenger cars and other kinds of transportation equipment.

The index for consumer nondurable goods other than foods and energy moved up 2.8 percent in 1992 in the wake of an increase of 4.3 percent a year before. Prices for tobacco products moved up 6.7 percent over the year. While this was well above the pace of inflation for most other kinds of goods, the 1992 advance represented a considerable deceleration from the increases of about 13 percent in the tobacco products index each year from 1987 through 1991.

The 1992 deceleration for tobacco products in part reflected a marked slowdown in growth in export demand for American-made cigarettes after years of steep increases; some foreign markets even showed a drop in consumption. For many years, foreign demand had been strong enough to offset the impact of declining cigarette consumption in the United States. (Domestic consumption was expected to be about 2.5 percent lower in 1992 than a year earlier.) However, production shifted abroad to some extent during 1992 as American tobacco manufacturers increasingly licensed the use of their brand names by foreign producers. The licensing displaced foreign demand for tobacco products made in the United States. In many parts of the world, American cigarette brand names are considered to be world-class, premium quality. Within the United States, prices for generic cigarettes were cut heavily during the summer to compete within that part of

the market which is sensitive to relative price levels.

The Producer Price Index for consumer durables moved up 1.3 percent in 1991, following a rise of 2.0 percent a year earlier. The new cars index inched up 0.6 percent over the year after increasing 3.1 percent in 1991. Domestic manufacturers continued their aggressive downsizing campaigns by cutting labor costs and improving productivity. By doing this, operations could be profitable at lower levels of output. Domestic new car sales in 1992 were up a little more than 2 percent after declining 12 percent in 1991.

The Producer Price Index for capital equipment increased 1.6 percent after rising 2.5 percent in 1991; the 1992 increase was the smallest since 1987. Most of the price deceleration for this index was the result of smaller price increases than in the previous year for civilian aircraft and passenger cars. Movements for most items within the capital goods grouping were relatively flat. While prices for most items within the transportation equipment category were up more than other kinds of capital goods, the effect of these price increases was offset by lower prices for electronic computers.

Energy

From December 1991 to December 1992, the crude energy materials index climbed 1.5 percent after falling 16.6 percent in 1991. Similarly, the index for intermediate energy materials (such as diesel fuel) rose 1.8 percent in 1992 after an 11.6-percent drop in 1991. Prices for finished energy goods (such as gasoline) edged down 0.1 percent in 1992, following the 9.6-percent drop in 1991. Energy prices were off sharply in 1991 after Operation Desert Storm ended and alleviated fears of a major supply disruption.

Most of the 1992 upturn in crude energy goods was attributable to the index for natural gas to pipelines, which rose 5.4 percent following a decrease of about 5 percent in 1991. After Hurricane Andrew temporarily interrupted about 5 percent of Gulf of Mexico production, gas prices were bid up as fearful suppliers tried to en-

sure enough supply. Gas prices peaked in October, about the same time that Congress passed an energy bill which emphasized the use of cleaner sources of energy such as natural gas. Prices retreated at the end of the year, however, as some utilities and manufacturers switched to alternate fuel sources, such as oil or coal.

Prices for crude petroleum dropped 2.2 percent in 1992 after plummeting 30.5 percent in 1991. Members of the Organization of Petroleum Exporting Countries (OPEC) had even more trouble than usual in regulating the output of their members. OPEC production reached its highest level in a decade in November (25.3 million barrels/day), as Kuwait continued to rebuild its oil producing capacity. Domestic production of crude petroleum declined about 3.5 percent over the year.

Foods

Prices received by domestic producers of finished consumer foods turned up 1.5 percent, about the same amount as they had fallen in 1991. Consumer food price increases during 1992 were dominated by a surge of nearly 70 percent in the fresh and dry vegetables index; within this category, prices soared for the two most dominant items, tomatoes and lettuce, as supplies were generally lower due to decreased acreage and adverse weather conditions. At the intermediate stage of processing, the index for foods and feeds decreased 0.5 percent following a 0.2-percent decline a year earlier. At the farm level, the Producer Price Index for crude foodstuffs and feedstuffs rose 2.8 percent after a 5.8-percent decline in 1991. Throughout 1992, severe weather conditions in different regions of the country damaged crops and hampered harvests; and wreaked havoc in agricultural markets. However, supplies were often only temporarily limited until harvests from other producing areas came to market.

Material prices

Prices for nondurable manufacturing materials edged up 0.3 percent from December 1991 to December 1992 after dropping 4.8 percent in the pre-

vious year. Price declines slowed for petrochemicals after dropping markedly in 1991. Weak export demand and the addition of new capacity both contributed to oversupply and the continuation of falling prices. However, the declines did not match those of the previous year which followed the collapse of petroleum prices after the Persian Gulf war. Declines also slowed in 1992 for paper, synthetic fibers, and nitrogenates.

The index for durable manufacturing materials rose 1.2 percent after falling 3.7 percent in 1991. Price declines were slower for aluminum mill shapes, flat rolled steel sheet and strip, hot rolled steel bars, cold finished steel bars, and primary platinum. Prices turned up after falling in the preceding year for copper and brass mill shapes and for primary aluminum. Prices rose much faster than in 1991 for hardwood lumber and for building paper and board. Flat glass prices increased after showing no change in the previous year. Price advances slowed, however, for prepared paint and cement. In addition, prices fell faster than a year earlier for primary lead, zinc, gold, and silver, and for semifinished steel mill products.

The index for materials and components for construction climbed 2.7 percent in 1992, after a slower increase of 0.8 percent in 1991. As mortgage rates continued to decline, from 8.50 percent in December 1991 to 8.22 percent in December 1992, many consumers took advantage of this by either refinancing existing mortgages or by purchasing new homes. These low interest rates boosted housing starts throughout the year, showing considerable improvement over 1991 levels. For 1992, new housing starts were up to more than 1.2 million units—18.5 percent higher than in 1991; however, housing starts in 1991 were at their lowest level since World War II. The 1992 increase was the first annual increase since 1989, as well as the largest annual increase since 1986.

While most annual price movements among construction materials were in line with more general levels of inflation, prices for many wood-related items soared. Following an

11.7-percent rise in 1991, softwood lumber prices climbed 22.1 percent, the highest yearly advance in almost 20 years. Softwood lumber prices were sharply higher in the first quarter as a result of short supplies. This shortage was exacerbated by the fear that new regulations protecting the Northern Spotted Owl might cause further supply restrictions. Lagging demand and the reduction of the Canadian export duty on logging products resulted in increased imports, pushing prices lower in the second quarter. Demand occasioned by damage from Hurricane Andrew, as well as increased housing starts and short supplies, pushed softwood lumber prices higher again late in the year.

The index for crude nonfood materials less energy turned up 5.6 percent in 1992 after falling 7.6 percent in 1991. This index showed moderate gains through the first three quarters, then showed some weakness early in the fourth quarter before rebounding strongly at the end of the year. As this index is sometimes considered a leading economic indicator, it shows that the economic climate in 1992 improved over that of 1991, although its erratic movement late in the year may signal further rough spots in the economy.

In 1992, price increases accelerated for the logs, bolts, timber, and pulpwood category. Prices turned up for waste paper, cattle hides, and aluminum base scrap. Price declines slowed for raw cotton, iron and steel scrap, and copper ores. In contrast, the phosphate and gold ore indexes fell more than in 1991.

Selected industries

The passenger car rental index rose 17.2 percent in 1992. Charges for passenger car rentals increased sharply on the strength of heavy demand during the traditional summer driving season. Substantially reduced airfares during this period further boosted demand for auto rentals because of the increased travel made possible by the fare cuts. Rental rates also were buoyed by higher purchase costs for the 1993 model-year fleet.

OTHER SIGNIFICANT INCREASES were registered in 1992 for electric power and natural gas utilities, tour operators, scrap and waste materials, marine cargo handling, refrigerated warehousing and storage, and radio broadcasting. In contrast, declines were registered for travel agencies, scheduled air transportation, and for water transportation of freight, not elsewhere classified. □

Consumer price rise slows further in 1992

Richard C. Bahr

The Consumer Price Index for All Urban Consumers (CPI-U) rose 2.9 percent in 1992, slowing from its already relatively languid 3.1-percent pace in 1991.¹ The 1992 rise was the lowest annual rate of increase since a 1.1-percent rise in 1986 and was the second smallest since 1965. The 1990 advance of 6.1 percent, propelled by a sharp escalation in petroleum-based energy prices following the Iraqi invasion of Kuwait in August of that year, was significantly higher than the average rate of increase of 5.1 percent during the 1980's. While the deceleration in 1991 was largely the result of the downturn in petroleum-based energy prices, the further moderation in 1992 was more broadly based. Even though energy prices increased again (indeed, the upturn in gasoline prices caused a turnaround in the transportation component of the index), prices for each of the other major expenditure groups rose less in 1992 than during the preceding year.

The food index, which rose 1.9 percent in 1991, its smallest advance since a 0.5-percent increase in 1976, slowed even further, to a 1.5-percent rise, in 1992. The 3.4-percent rise in this component over the past 2 calendar years was the smallest since the

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2-year period ended December 1964. More noteworthy was the deceleration in the index for all items less food and energy. After a 4.4-percent rise in 1991, this index advanced 3.3 percent in 1992, its smallest increase since a 3.0-percent rise in 1972, during a period of price controls.

The economy

Sluggish economic conditions were an important cause of 1992's moderate price rise. Although the recession that began in July 1990 ended officially in March 1991, the delay between the end of the recession and its announcement, in December 1992, was the result of the sluggishness of the recovery. Unemployment reached an 8-year high of 7.7 percent in June 1992 and then began to decline slowly, ending the year at 7.3 percent. The number of private sector jobs in December remained 1.7 million below the prerecession peak. Record numbers of bankruptcies of businesses and individuals continued to be filed during most of 1992.

An indication of possible future economic improvement, however, was shown in the rise in the government's index of leading economic indicators during the last 3 months of the year. The December increase of 1.7 percent was the largest in nearly a decade.

The cost of labor and materials remained relatively stable during the year. Total labor compensation costs paid by U.S. nonfarm business employers (which include wages, salaries, and benefits paid to their employees) increased 3.7 percent in 1992, after advancing 4.2 percent in 1991. In addition, productivity was up 3.2 percent over the past year, offsetting most of the rise in hourly compensation. As a result, labor costs per unit of output rose only 0.4 percent from 1991 (fourth quarter to fourth quarter). The Producer Price Index (PPI) for intermediate materials, supplies, and components rose only 1.1 percent; the PPI for capital equipment rose only 1.6 percent; and long-term interest rates remained relatively low, keeping the cost of financing capital equipment purchases moderate.

Table 1. Annual percent change in the Consumer Price Index for All Urban Consumers (CPI-U), selected expenditure categories, 1983-92, not seasonally adjusted

Expenditure category	12 months ended December—									
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
All items.....	3.8	3.9	3.8	1.1	4.4	4.4	4.6	6.1	3.1	2.9
All items less energy	4.5	4.4	4.0	3.8	4.1	4.7	4.6	5.2	3.9	3.0
All items less food and energy	4.8	4.7	4.3	3.8	4.2	4.7	4.4	5.2	4.4	3.3
Commodities less food and energy commodities	5.0	3.1	2.2	1.4	3.5	4.0	2.7	3.4	4.0	2.5
Services less energy services	4.8	5.6	5.7	5.2	4.5	5.0	5.3	6.0	4.6	3.7
Energy	-5	.2	1.8	-19.7	8.2	.5	5.1	18.1	-7.4	2.0
Energy commodities.....	-3.2	-1.8	3.4	-30.5	17.8	-2.3	7.9	35.4	-16.1	1.2
Energy services	4.1	3.5	-6	-3.3	.2	3.2	2.8	1.5	3.5	2.8
Food	2.7	3.8	2.6	3.8	3.5	5.2	5.6	5.3	1.9	1.5
Fresh fruit.....	-1.3	22.6	1.3	5.9	10.5	13.4	8.1	10.6	10.2	-3.6
Food away from home.....	4.1	4.2	3.8	4.3	3.7	4.4	4.6	4.5	2.9	1.4
Shelter.....	4.7	5.2	6.0	4.6	4.8	4.5	4.9	5.2	3.9	2.9
Residential rent.....	4.8	5.9	6.4	5.0	4.0	3.6	4.2	4.1	2.9	2.3
Lodging while out of town.....	6.8	6.3	6.4	4.4	3.9	4.5	5.4	15.8	8.5	3.8
Homeowners' costs	4.5	5.1	5.9	4.6	5.3	4.7	5.1	4.7	3.7	2.9
Medical care	6.4	6.1	6.8	7.7	5.8	6.9	8.5	9.6	7.9	6.6
Apparel and upkeep	2.9	2.0	2.8	.9	4.8	4.7	1.0	5.1	3.4	1.4
College tuition.....	9.6	10.1	8.6	7.4	7.0	7.7	8.1	8.2	12.1	10.0
Alcoholic beverages	3.4	2.7	5.5	2.0	3.3	3.9	4.8	4.2	9.9	2.9
Tobacco products.....	10.1	5.0	7.2	5.9	7.9	9.4	14.7	10.8	11.1	8.1
Auto finance	-7.9	6.8	-8.3	-7.3	5.9	8.3	4.3	.0	-7.1	-13.9

All items less food and energy

The index for items other than the volatile food and energy components, which is often used as a measure of the underlying rate of consumer inflation, rose 3.3 percent in 1992. This was the smallest rise in this index since 1972, during price controls. It was also significantly lower than the 4.5-percent average annual increase in this component over the 10 years ended 1991. The slowdown in 1992 was evident in both commodity and service prices, with the index for services less energy accounting for slightly more than half of the deceleration in the index for all items less food and energy. A smaller rise in rent of shelter compared with the previous year's increase—2.9 percent versus 3.9 percent—accounted for two-thirds of the deceleration in the index for services less energy. Slowdowns in the growth of prices for apparel commodities and alcoholic beverages were responsible for about two-thirds of the deceleration in the index for commodities less food and energy.

Shelter and other selected household costs. The sluggish economy and the slumping housing market caused further moderation in the costs for

shelter. These costs were up 2.9 percent in 1992, after advancing 5.2 percent in 1990 and 3.9 percent in 1991. The 1992 change was the smallest advance since a 2.4-percent rise in 1982, at the depth of the 1981-82 recession. Residential rent rose 2.3 percent in 1992, its smallest annual rise since 1967. Charges for lodging while out of town, which include hotel and motel charges and rent for vacation and resort properties, rose 3.8 percent in 1992, less than half the 8.5-percent increase in 1991 and the smallest rise in this component since a 2.6-percent advance in 1972. Homeowners' costs were up 2.9 percent in 1992, replacing 1991's rise of 3.7 percent as the smallest increase in this component since the rental equivalence approach was adopted in January 1983.²

Even some household items, whose prices accelerated in 1991, showed decelerations in 1992. Among these were telephone services, the cost of which had turned up from a 0.4-percent decline in 1990 to a 3.5-percent rise in 1991. In 1992, however, the price of telephone services turned back down to a 0.3-percent decline. Water and sewerage maintenance charges, which had accelerated to a 7.8-percent increase in 1991, slowed to a 6.6-percent pace in 1992. Similarly, after advancing 11.5 percent in

1991, refuse collection charges rose 8.5 percent in 1992. However, charges for cable television services continued their 1991 deceleration, with a 3.7-percent rise in 1992. This slowdown followed double-digit price increases in 2 of the last 5 years and was the smallest rise since this component was first published in January 1983.

Other significant price movements. Apparel and upkeep prices continued to slow in 1992, rising only 1.4 percent after advancing 5.1 percent in 1990 and 3.4 percent in 1991. Relatively slack consumer demand caused many retailers to continue to moderate price increases, to avoid a further softening of sales volume.

Prices of alcoholic beverages slowed to a 2.9-percent rise in 1992, compared with a 9.9-percent advance the preceding year. This higher 1991 figure resulted in part from an increase in the Federal excise tax at the beginning of the year.³

Medical care costs, which have increased faster than the overall consumer inflation rate each year since 1980, continued that trend in 1992, rising 6.6 percent. However, this advance represented a continuing slowdown from increases of 9.6 percent in 1990 and 7.9 percent in 1991. Medical care commodities slowed to a 5.2-per-

cent increase, and professional medical services decelerated to a 5.7-percent rise. Costs for hospital and related services rose 8.8 percent in 1992, slightly lower than the 8.9-percent pace posted in 1991, which itself was a slowdown from advances of 11 percent or more in each of the 3 preceding years.

College tuition rose 10.0 percent in 1992, after rising 12.1 percent in 1991. These increases were somewhat higher than the 7.0-percent to 8.6-percent advances that marked each year between 1985 and 1990. Cuts in funding by State governments, which supports many universities, continued to lead to tuition hikes.

Prices for tobacco and smoking products continued to advance substantially, but slowed to an 8.1-percent rise in 1992, after increasing at double-digit rates for 3 straight years. As with alcoholic beverages, the 1991 advance of 11.1 percent in tobacco prices resulted in part from the January 1991 Federal excise tax increase. Price rises for tobacco and smoking products have exceeded the overall consumer inflation rate for 11 years running.

The cost of purchasing a new car dropped in 1992, the result of a sharp decline of 13.9 percent in automobile finance charges and a slowing of price increases for new cars, which were 2.3 percent in 1992, compared with 3.3 percent the previous year. Lower interest rates and the prevalence of promotional rates offered by auto dealers were what lowered the costs of financing a new car. However, prices for used cars accelerated sharply, rising 7.4 percent in 1992, after advancing 2.6 percent in 1991.

Airline fares rose 6.6 percent in 1992, after dropping 6.0 percent in 1991. Most of the advance in 1992 occurred in the last 3 months of the year, after the end of the latest round of fare wars.

Food

After decelerating sharply to a 1.9-percent increase in 1991, the food index slowed further to a 1.5-percent rise in 1992. The 3.4-percent rise in this component over the past 2 years was the smallest since the 2-year peri-

od ended December 1964. A slight acceleration in prices for food at home during 1992 was more than offset by a sharp deceleration in prices for restaurant meals and snacks.

Restaurant meals and snacks. Prices for food eaten away from home—that is, food purchased in restaurants, from fast-food outlets, and from vending machines—continued to decelerate sharply in 1992, rising 1.4 percent after increases of 4.5 percent in 1990 and 2.9 percent in 1991. The 1.4-percent advance was the smallest increase in this component since a similar one in 1964. Eating establishments kept price increases low to avoid losing customers in the face of a sluggish economy.

Grocery store food. Prices for food purchased in grocery stores and eaten at home rose 1.5 percent in 1992, after advancing 1.3 percent in 1991. Larger price increases were posted for poultry, dairy products, and cereal and bakery products, together with a turnaround from falling to rising meat prices. These increases were partially offset by slowdowns in prices for fruits and vegetables, fish and seafood, and other food at home, together with a larger decline in prices for eggs.

Meat prices rose 0.2 percent in 1992, after declining 2.1 percent in 1991. Poultry prices accelerated in 1992, rising 2.7 percent, after increasing only 0.4 percent the previous year. Prices for fruits and vegetables rose 2.2 percent in 1992, exactly half the 1991 increase. This deceleration was the result of a sharp downturn in prices for fresh fruit, which decreased 3.6 percent after rising between 8.1 percent and 13.4 percent for the previous 5 years. The deceleration was particularly evidenced by downturns in prices for oranges and apples. A return to normal production levels after freezes in the prior 2 years—particularly 1991—increased the supply of oranges, while a somewhat larger apple crop combined with reduced European demand for American apples to increase the availability of apples. On the other hand, prices for fresh

vegetables—particularly tomatoes—and processed fruits and vegetables accelerated. By contrast, egg prices declined for the third year in a row in 1992. The 4.7-percent drop was slightly larger than the 4.6-percent fall in 1990 and still larger than the 4.0-percent decline in 1991.

Energy

Energy price trends in 1992 reflected a return to more normal conditions than in recent years. Prices turned back up in 1992, rising 2.0 percent, after an abrupt drop of 7.4 percent in 1991. The turnaround was due to an acceleration in the prices of petroleum-based energy commodities, which rose 1.2 percent in 1992 after declining 16.1 percent in 1991. Gasoline prices rose 2.0 percent. The sharp energy price drop in 1991 followed a large price increase in 1990. (The Iraqi invasion of Kuwait in late 1990 drove up crude oil prices.) In early 1992, the Organization of Petroleum Exporting Countries (OPEC) tried, with limited success, to regulate the supply of crude oil. Partially offsetting the acceleration in energy commodity prices was a moderation in prices for energy services. A sharp deceleration was posted in prices for electricity, which rose only 1.7 percent on the heels of a 5.0-percent advance in 1991.

Summary and outlook

The further deceleration of inflation in 1992 was broadly based. The index excluding the volatile food and energy components slowed to a rate not seen since 1972, the middle of the price control era of the early 1970's. A number of components decelerated to slow rates of increase last occurring in the early 1970's and, in some cases, the early 1960's. Many factors suggest that consumer price rises may continue to be moderate. Unemployment rates over 7 percent mean that there is considerable room for the economy to grow before tight labor markets push up wages. Further room for growth without significant inflation is provided by a capacity utilization rate 5 points below the long-term average. Relatively low price increases for in-

intermediate materials and capital goods, as well as low long-term interest rates, contribute to minimal cost pressures.

The rates of change for selected expenditure categories over the past 10 years are shown in table 1. □

Footnote

¹ Annual percent changes are from December to December, unless otherwise noted.

² See Bureau of Labor Statistics,

"Changing the Homeownership Component of the Consumer Price Index to Rental Equivalence," *CPI Detailed Report, January 1983*, pp. 7-13.

³ The Federal excise tax increase was mandated in the Omnibus Budget Reconciliation Act of 1990.

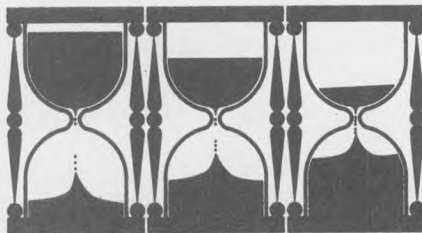
Theory and the real world

In recent years, many observers have also noted the enormous gap that has arisen between the reality of managerial power in postwar American society and the theory of industrial self-government that was enshrined in the Wagner Act and in the rhetoric of the labor law that has evolved over the last half century. As the American unions decline in power and influence, and as capital has become ever more global and mobile, the idea that collective bargaining represents the road to an industrial democracy seems increasingly implausible.

—Nelson Lichtenstein

"Great expectations: the promise of industrial jurisprudence and its demise, 1930-1960," *Industrial Democracy in America: The Ambiguous Promise*, Nelson Lichtenstein, and Howell John Harris, eds. (New York, Woodrow Wilson Center Press and Cambridge University Press, 1993), p. 115.

Major agreements expiring next month



This list of collective bargaining agreements that expire in June is based on information collected by the Bureau's Office of Compensation and Working Conditions. It includes agreements covering 1,000 workers or more. Private industry is arranged in order of Standard Industrial Classification. Labor organizations listed are affiliated with the AFL-CIO, except where noted as independent (Ind.).

Private sector

Mining

Kennecott Corp., Utah, various unions, 1,900 workers

Construction

Allied Building Metal Industries, Inc. (ornamental, architectural, and miscellaneous iron work), New York, NY; Iron Workers, 1,200 workers

Allied Building Metal Industries, Inc. (structural iron work), New York, NY; Iron Workers, 2,500 workers

Associated Brickmason Contractors of Greater New York, New York, NY; Bricklayers, 1,700 workers

Associated Building Contractors of Northwestern Ohio, Inc., northwest Ohio; Carpenters, 1,900 workers

Associated General Contractors and Pile-driving Contractors Association, northern California; Carpenters, 1,000 workers

Associated General Contractors of America, Inc., northern Nevada; Carpenters, 1,000 workers

Associated General Contractors of California and Southern California Mechanical Contractors Association, southern California; Plumbers, 4,500 workers

Associated General Contractors of California, Inc. and others (outside agreement), northern California; Laborers, 12,000 workers

Associated General Contractors of California, Inc., northern California; Carpenters, 3,000 workers

Associated General Contractors of California, Inc., northern California; Operating Engineers, 15,000 workers

Associated General Contractors of California, northern California; Teamsters, 1,000 workers

Associated General Contractors of New Jersey and others, New Jersey and New York; Operating Engineers, 5,000 workers

Building Construction Agreement, New York, NY; Carpenters, 20,000 workers

Building Industry Association and others, northern California; Carpenters, 2,500 workers

Cement League, New York, NY; Iron Workers, 1,300 workers

Cement League and independent contractors, New York, NY; Laborers, 2,800 workers

Construction Employers Association and three other associations, northern California; Carpenters, 14,000 workers

Elevator Manufacturers Association, New York, NY; Elevator Constructors, 1,800 workers

Fox River Valley General Contractors Association (commercial building agreement), Kane, Kendall, and McHenry counties, IL; Carpenters, 1,000 workers

General Contractors Association of New York, Inc. (excavation and foundation work), New York, NY; Laborers, 3,000 workers

General Contractors Association of New York, Inc. (pavers and road builders), New York, NY; Laborers, 1,200 workers

General Contractors Association of New York, Inc., New York, NY; Operating Engineers, 3,000 workers

General Contractors Association of New York, other employer associations, and independent companies, New York, NY; Carpenters, 1,300 workers

Highway Contractors, Inc. (heavy-highway agreement), Kentucky; Laborers, 4,000 workers

Independent building contractors, Glen Cove, NY; Carpenters, 1,200 workers

Independent dock builders agreement, New York and New Jersey; Carpenters, 2,000 workers

Keystone Building Contractors Association, Inc. and Associated General Contractors of America, Inc., western Pennsylvania; Laborers, 1,500 workers

Mechanical Contractors Association (steamfitters), New York, NY; Plumbers, 3,300 workers

Mechanical Contractors Association of northern California and others (steamfitters), Contra Costa and Alameda counties, CA; Plumbers, 1,200 workers

Metropolitan New York Drywall Contractors Association, Inc., New York, NY; Carpenters, 2,500 workers

Nassau and Suffolk Contractors Association (heavy-highway agreement), New York, NY; Operating Engineers, 1,000 workers

Northern California Contractors Association, northern California; Carpenters, 2,000 workers

Plumbing and Air Conditioning Contractors of Arizona, statewide; Plumbers, 2,000 workers

Plumbing and Piping Industry Council, southern California; Plumbers, 10,000 workers

Residential Contractors Employers Council (residential agreement), Chicago, IL; Carpenters, 14,000 workers

Resilient floor coverers, New York, NY; Carpenters, 1,500 workers

Seven associations of area contractors (building agreement), Nassau and Suffolk counties, NY; Laborers, 2,000 workers

Sheet Metal and Air Conditioning Contractors Association, Kansas City, MO; Sheet Metal Workers, 1,100 workers

Sheet Metal Contractors Association of Washington, DC; Sheet Metal Workers, 1,500 workers

Structural Steel and Ornamental Iron Association of New Jersey, Inc., northern New Jersey; Iron Workers, 3,500 workers

Food and kindred products

Michigan Sugar Co., Michigan; Grain Millers, 1,100 workers

Smithfield Packing Co., Smithfield, VA; Food Processors (Ind.), 1,200 workers

Wholesale Bakers Group (drivers), southern California; Teamsters, 2,000 workers

Apparel and other textile products

Lingerie Manufacturers Association of New York, Inc.; Negligee Manufacturers Association of New York, Inc.; and Allied Underwear Association, Inc., New York, NY; Ladies' Garment Workers, 3,000 workers

Lumber and wood products

Manufacturing Woodworkers Association of Greater New York, New York, NY; Carpenters, 3,000 workers

Paper and allied products

International Paper Co., Erie, PA; Paperworkers, 1,000 workers

James River Corp., Berlin, NH; Paperworkers, 1,250 workers

Proctor and Gamble Paper Products Co., Green Bay, WI; Paperworkers, 1,300 workers

Chemicals and allied products

Johnson & Johnson Products, Inc. and Ethicon, Inc., New Brunswick, NJ; Clothing and Textile Workers, 1,200 workers

Martin Marietta Energy Systems, Inc., Oak Ridge, TN; Atomic Trades and Labor Council, 3,400 workers

Primary metal industries

Stockham Valves & Fittings, Inc., Birmingham, AL; Steelworkers, 1,100 workers

Fabricated metal products

Aluminum Company of America, Cleveland, OH; Automobile Workers, 1,000 workers

Machinery, except electrical

Copeland Corp., Sidney, OH; Electronic Workers (IUE), 1,200 workers

Unisys Corp., St. Paul, MN; Electrical Workers (IBEW), 1,080 workers

Transportation equipment

Bell Helicopter Textron, Inc., Fort Worth, TX; Automobile Workers, 2,800 workers

Huffy Corp., Celina, OH; Steelworkers, 1,667 workers

Rockwell International Corp., Aerospace Group, interstate; Automobile Workers, 7,500 workers

Transportation

American Maritime Association (unlicensed seamen), interstate; Seafarers, 4,500 workers

MTL, Inc., Honolulu, HI; Teamsters, 1,150 workers

Public utilities

Georgia Power Co., statewide; Electrical Workers (IBEW), 6,000 workers

Union Electric Co. (office, sales, clerical and technical), St. Louis, MO; Electrical Workers (IBEW), 1,200 workers

Union Electric Co. (operating and maintenance), St. Louis, MO; Operating Engineers, 1,550 workers

Union Electric Co. (outside and physical), St. Louis, MO; Electrical Workers (IBEW), 1,467 workers

Wholesale and retail trade

Almacs, Inc., Massachusetts and Rhode Island; Food and Commercial Workers, 3,000 workers

Schnucks Markets, National Supermarkets, and Dierbarges, St. Louis, MO; Food and Commercial Workers, 2,300 workers

Finance, insurance, and real estate

John Hancock Mutual Life Insurance Co., interstate; Food and Commercial Workers, 3,000 workers

Services

Alliance of Motion Picture and Television Producers, interstate; Directors Guild, 3,600 workers

Cedars-Sinai Medical Center, Los Angeles, CA; Service Employees, 1,400 workers

Swedish Hospital Medical Center, Seattle, WA; United Staff Nurses Union (Ind.), 1,150 workers

Temple University (clerical and office), Philadelphia, PA; Hospital and Health Care Employees (Ind.), 1,400 workers

Textile Rental Services Association, Los Angeles, CA; Laundry and Dry Cleaning Union, 3,000 workers

Public sector

Transportation and public utilities

Baltimore Transit Authority (operators and mechanics), Baltimore, MD; Transit Union (ATU), 2,100 workers

New Jersey Transit Authority, Maplewood, NJ; Transit Union (ATU), 4,000 workers

Health services

Flint Hurley Hospital (clerical), Flint, MI; State, County and Municipal Employees, 1,000 workers

Hawaii State (institutional health and correctional unit), Honolulu, HI; State, County and Municipal Employees, 1,950 workers

Oregon State (nurses), Statewide; Oregon Nurses Association (ANA-Ind.), 1,100 workers

Oregon State Health Science University, Portland, Oregon; Oregon Nurses Association (ANA-Ind.), 1,000 workers

Pennsylvania State (nonsupervisory nonprofessional social and rehabilitation), Pennsylvania; State, County and Municipal Employees, 10,000 workers

Pennsylvania State (supervisory professional social and rehabilitation), Pennsylvania; Service Employees, 2,000 workers

Wisconsin State (registered nurses), statewide; Nurses (ANA-Ind.), 1,500 workers

Education

Alachua County public schools (teachers), Alachua County, FL; Teachers (AFT), 1,600 workers

Albuquerque Public School District (educational assistants), Albuquerque, NM; Teachers (AFT), 1,700 workers

Anne Arundel County public schools (bus drivers and other noninstructional employees), Anne Arundel County, MD; State, County and Municipal Employees, 1,400 workers

Anne Arundel County public schools (instructional aides, clerical, and technical employees), Anne Arundel County, MD; Secretary and Aides Association (Ind.), 1,100 workers

Anne Arundel County public schools (teachers), Anne Arundel County, MD; Education (NEA-Ind.), 4,000 workers

Anoka-Hennepin Independent School District (teachers), Coon Rapid, MN; Anoka-Hennepin Education Association (Ind.), 2,200 workers

Aurora County public schools (teachers), Aurora County, CO; Aurora Education Association (NEA-Ind.), 1,580 workers

Baltimore city public schools (paraprofessionals), Baltimore, MD; Teachers (AFT), 1,600 workers

Baltimore city public schools (teachers), Baltimore, MD; Teachers (AFT), 6,700 workers

Baltimore County Board of Education (clerical and aides), Baltimore County, MD; Education (NEA-Ind.), 1,100 workers

Baltimore County Board of Education (maintenance and bus drivers), Baltimore County, MD; State, County and Municipal Employees, 2,000 workers

Baltimore County Board of Education (teachers), Baltimore County, MD; Education (NEA-Ind.), 6,800 workers

Bay County public schools (teachers), Bay County, FL; Education (NEA-Ind.), 1,400 workers

Billings public schools (teachers and related professionals), Billings, MT; Billings Education Association (NEA-Ind.), 1,059 workers

Brevard County public schools (classified workers), Brevard County, FL; Painters, 2,500 workers

California State University (unit 3-faculty), California; California Faculty Association (Ind.), 19,000 workers

Carroll County Board of Education (teachers), Carroll County, MD; Education (NEA-Ind.), 1,367 workers

Chattanooga public schools (teachers), Chattanooga, TN; Education (NEA-Ind.), 1,400 workers

Clark County Board of Education (classified), Clark County, NV; Education Support Employees Association (Ind.), 5,283 workers

Clark County Board of Education (teachers), Clark County, NV; Clark County Classroom Teachers Association (NEA-Ind.), 6,586 workers

Compton Board of Education (teachers), Compton, CA; Education (NEA-Ind.), 1,300 workers

Davenport public schools (teachers), Davenport, IA; Education (NEA-Ind.), 1,250 workers

Davis County Board of Education (classified), Davis County, UT; Utah School Employees Association (Ind.), 2,000 workers

Davis County Board of Education (teachers), Davis County, UT; Davis County Education Association (NEA-Ind.), 2,400 workers

Eastern Oregon State College (general unit), La Grande, OR; Service Employees, 2,350 workers

Escambia County public schools (teachers), Escambia County, FL; Education (NEA-Ind.), 2,500 workers

Eugene public schools (teachers), Eugene, OR; Education (NEA-Ind.), 1,100 workers

Evansville public schools (teachers), Evansville, IN; Education (NEA-Ind.), 1,300 workers

Florida State University (graduate assistants), Tallahassee, FL; United Faculty of Florida (NEA-Ind.), 3,200 workers

Florida State University (operations services), Tallahassee, FL; State, County and Municipal Employees, 10,800 workers

Fontana Unified School District (teachers and counselors), Fontana, CA; Education (NEA-Ind.), 1,200 workers

Fresno public schools (clerical and teachers aides), Fresno, CA; California State Employees Association (SEIU), 1,700 workers

Hamilton County public schools (teachers), Hamilton County, TN; Education (NEA-Ind.), 1,300 workers

Hawaii State public schools (teachers), HI; statewide Teachers Association (NEA-Ind.), 9,100 workers

Hawaii State University (faculty), Honolulu, HI; University of Hawaii Professional Assembly, 2,900 workers

Hayward Board of Education (teachers), Hayward, CA; Education (NEA-Ind.), 1,000 workers

Hennepin County public schools (teachers), Hennepin County, MN; Teachers (AFT), 1,200 workers

Howard County Board of Education (teachers), Howard County, MD; Education (NEA-Ind.), 2,200 workers

Indiana State University (maintenance unit), Bloomington, IN; State, County and Municipal Employees, 1,400 workers

Leon County public schools (teachers), Leon County, FL; Education (NEA-Ind.), 1,800 workers

Minneapolis Board of Education (teachers), Minneapolis, MN; Teachers (AFT), 3,000 workers

Minnesota State community colleges (faculty), MN; Minnesota College Faculty Association (Ind.), 2,300 workers

Montgomery County Board of Education (school support services), Montgomery County, MD; Montgomery County Council of Supporting Service Employees (Ind.), 6,500 workers

Montgomery County Board of Education (teachers), Montgomery County, MD; Education (NEA-Ind.), 7,200 workers

Moreno Valley Unified School District (certificated personnel), Moreno Valley, CA; Moreno Valley Education Association (NEA-Ind.), 1,200 workers

Nashville public schools (teachers), Nashville, TN; Metropolitan Nashville Education Association (NEA-Ind.), 4,300 workers

New Rochelle public schools (teachers and related employees), New Rochelle, NY; New York Federation of United School Employees (Ind.), 1,000 workers

Okaloosa County public schools (teachers aides, cafeteria, bus drivers, clerical, and custodial), Okaloosa County, FL; Education (NEA-Ind.), 1,150 workers

Oklahoma City Board of Education (support group), Oklahoma City, OK; AFT (formerly Oklahoma Federation of Classified Employees-Ind.), 1,750 workers

Orange County public schools (teachers), Orange County, FL; Orange County Classroom

Teachers Association (NEA-Ind.), 7,000 workers

Orange Unified School District (teachers and administrators), Orange County, CA; Orange Unified Education Association (Ind.), 1,150 workers

Orleans Parish public schools (teachers), Orleans Parish, LA; Teachers (AFT), 5,034 workers

Palm Beach County public schools (teachers), Palm Beach County, FL; Palm Beach County Teachers Association (NEA-Ind.), 7,100 workers

Pennsylvania State colleges (faculty and administrators), PA; Teachers (AFT), 4,500 workers

Pennsylvania State University (technical), PA; Teamsters, 2,500 workers

Phoenix Union High School District (teachers), Education (NEA-Ind.), 1,270 workers

Pinellas County public schools (clerical), Pinellas County, FL; Education (NEA-Ind.), 1,300 workers

Portland public schools (custodians, bus drivers, crafts, and trades), Portland, OR; District Council Union of Trade and Service Employees (Ind.), 1,900 workers

Portland public schools (classified), Portland, OR; Portland Federation of Teachers and Classified Employees (Ind.), 1,400 workers

Richmond Unified School District (noninstructional employees), Richmond, CA; Public Employees Association (Ind.); 1,000 workers

Richmond Unified School District (teachers), Richmond, CA; Education (NEA-Ind.), 1,350 workers

Rochester Board of Education (classified), Rochester, NY; State, County and Municipal Employees, 1,400 workers

Rosemount-Apple Valley-Eagan School Board (teachers), Rosemount, MN; Rosemount Federation of Teachers (NEA-Ind.), 1,250 workers

Salem public schools (classified employees), Salem, OR; Oregon Employees Association (Ind.), 1,000 workers

Salem public schools (teachers), Salem, OR; Education (NEA-Ind.), 1,500 workers

Salt Lake City public schools (teachers), Salt Lake City, UT; Salt Lake Teachers Association (Ind.), 1,300 workers

Seminole County Board of Education (teachers), Seminole County, FL; Education (NEA-Ind.), 2,300 workers

Shawnee Mission public schools (teachers), Shawnee Mission, KS; Education (NEA-Ind.), 2,100 workers

South Dakota Board of Regents State Colleges, Pierre, SD; Education (NEA-Ind.), 1,500 workers

Major Agreements Expiring Next Month

St. Louis County public schools (teachers), St. Louis County, MN; Duluth Federation of Teachers (AFT), 1,100 workers

St. Paul Board of Education (teachers), St. Paul, MN; St. Paul Federation of Teachers (AFT), 2,600 workers

Sweetwater High School District (teachers), Chula Vista, CA; Education (NEA-Ind.), 1,400 workers

Tucson public schools (teachers), Tucson, AZ; Education (NEA-Ind.), 3,200 workers

University of Connecticut (faculty), Storrs, CT; University Professors (Ind.), 1,300 workers

University of Maine (faculty), Bangor, ME; Education (NEA-Ind.), 1,250 workers

University of Massachusetts (professionals), Amherst, MA; Service Employees, 1,100 workers

University of Minnesota (cafeteria, custodians, and maintenance), St. Paul, MN; Teamsters, 1,650 workers

University of Wisconsin (teaching and program assistants), Madison, WI; Teachers (AFT), 2,300 workers

Utica Community schools (teachers), Utica, MI, Education (NEA-Ind.), 1,200 workers

Volusia County public schools (custodians, cafeteria, maintenance, and bus drivers), Volusia County, FL; State, County and Municipal Employees, 1,452 workers

Washington County public schools (teachers), Washington County, MD; Education (NEA-Ind.), 1,100 workers

Waterbury public schools (teachers and related professionals), Waterbury, CT; Education (NEA-Ind.), 1,100 workers

Woodbridge public schools (teachers, related professionals, and support personnel), Woodbridge, NJ; Woodbridge Township Education Association (Ind.), 1,450 workers

Public administration

Albuquerque (general unit), Albuquerque, NM; State, County and Municipal Employees, 1,356 workers

Anne Arundel County (general unit), Anne Arundel County, MD; State, County and Municipal Employees, 1,220 workers

Baltimore County (white collar), Baltimore County, MD; State, County and Municipal Employees, 1,800 workers

Clark County (general unit), Clark County, NV; Clark County Public Employees Association (Ind.), 2,500 workers

Cuyahoga County Welfare Department (general unit), Cuyahoga County, OH; State, County and Municipal Employees, 1,560 workers

Hawaii State (blue collar unit-12), statewide; State, County and Municipal Employees, 7,700 workers

Hawaii State (nonsupervisory white collar-unit 3), statewide; State, County and Municipal Employees, 11,000 workers

Hawaii State (professional and scientific-unit 13), statewide; State, County and Municipal Employees, 4,600 workers

Iowa State (blue collar), statewide; State, County and Municipal Employees, 6,000 workers

Iowa State (clerical), statewide; State, County and Municipal Employees, 6,400 workers

Iowa State (fiscal and staff), statewide; State, County and Municipal Employees, 1,000 workers

Iowa State (professional social services), statewide; State, County and Municipal Employees, 2,000 workers

Iowa State (technical), statewide; State, County and Municipal Employees, 6,000 workers

Las Vegas (general unit), Las Vegas, NV; Las Vegas Employees Association (Ind.), 1,000 workers

Minnesota State (professionals), statewide; Minnesota Association of Professional Employees (Ind.), 6,833 workers

Minnesota State (general unit), statewide; State, County and Municipal Employees, 18,936 workers

Minnesota State (general supervisory), statewide; Middle Management Association (Ind.), 2,600 workers

Monterey County (various classifications), Monterey County, CA; Service Employees, 1,450 workers

Montgomery County (office, professional, and technical), Montgomery County, MD; Food and Commercial Workers, 2,300 workers

Montgomery County (service, labor, and trades), Montgomery County, MD; Food and Commercial Workers, 1,300 workers

Nebraska State (maintenance trades and technical), statewide; State, County and Municipal Employees, 9,000 workers

Orange County (clerical), Orange County, CA; Orange County Employees Association (Ind.), 3,200 workers

Orange County (general unit), Orange County, CA; Orange County Employees Association (Ind.), 2,850 workers

Orange County (management supervisors), Orange County, CA; Orange County Employees Association (Ind.), 1,200 workers

Oregon State (general unit), statewide; Service Employees, 17,000 workers

Pennsylvania State (clerical), statewide; State, County and Municipal Employees, 1,650 workers

Pennsylvania State (clerical, administrative, and fiscal), statewide; State, County and Municipal Employees, 16,650 workers

Pennsylvania State (engineers, scientists, and nonsupervisory professionals), statewide; State, County and Municipal Employees, 1,150 workers

Pennsylvania State (first level supervisory), statewide; State, County and Municipal Employees, 4,500 workers

Pennsylvania State (human services), statewide; State, County and Municipal Employees, 15,400 workers

Pennsylvania State (liquor store clerks-unit MI), statewide; Food and Commercial Workers, 2,500 workers

Pennsylvania State (maintenance and trades), statewide; State, County and Municipal Employees, 10,900 workers

Pennsylvania State (nonprofessional technical), statewide; State, County and Municipal Employees, 1,800 workers

Pennsylvania State (nonsupervisory nonprofessional inspection, investigation, and safety), statewide; State, County and Municipal Employees, 1,200 workers

Pennsylvania State (professional, administrative, and fiscal), statewide; State, County and Municipal Employees, 1,600 workers

Pennsylvania State (supervisory maintenance and trades employees), statewide; State, County and Municipal Employees, 1,400 workers

Riverside County (clerical support services), Riverside County, CA; Riverside County Employees Association (Ind.), 3,000 workers

Riverside County (inspection and technicians), Riverside County, CA; Riverside County Employees Association (Ind.), 1,000 workers

Riverside County (professionals), Riverside County, CA; Riverside County Employees Association (Ind.), 1,200 workers

Riverside County (trades, crafts, and laborers), Riverside County, CA; Riverside County Employees Association (Ind.), 1,000 workers

San Bernardino County (administrative and services), San Bernardino County, CA; San Bernardino Public Employees Association (Ind.), 1,000 workers

San Bernardino County (clerical), San Bernardino County, CA; San Bernardino Public Employees Association (Ind.), 2,300 workers

San Bernardino County (professionals), San Bernardino County, CA; San Bernardino Public Employees Association (Ind.), 1,150 workers

San Bernardino County (technicians and inspectors), San Bernardino County, CA; San

Bernardino Public Employees Association (Ind.), 1,850 workers

San Diego city (maintenance, skilled trades, and heavy equipment operators), San Diego, CA; State, County and Municipal Employees, 2,100 workers

San Diego city (white collar), San Diego, CA; , Municipal Employees Association (Ind.), 3,700 workers

San Jose (clerical and support staff), San Jose, CA; State, County and Municipal Employees, 2,100 workers

Toledo (general unit), Toledo, OH; State, County and Municipal Employees, 1,000 workers

Ventura County (general unit), Ventura County, CA; Service Employees, 4,300 workers

Wisconsin State (blue collar), statewide; State, County and Municipal Employees, 4,615 workers

Wisconsin State (clerical and related), statewide; State, County and Municipal Employees, 7,997 workers

Wisconsin State (engineers), statewide; Engineers and Architects (Ind.), 1,125 workers

Wisconsin State (science professionals), statewide; Teachers (AFT), 1,100 workers

Wisconsin State (social services), statewide; State, County and Municipal Employees, 2,200 workers

Wisconsin State (technical employees), statewide; State, County and Municipal Employees, 5,036 workers

Protective services

Baltimore city (firefighters), Baltimore, MD; Fire Fighters, 1,450 workers

Baltimore city (police), Baltimore, MD; Police (FOP-Ind.), 3,000 workers

Baltimore County (firefighters), Baltimore County, MD; Fire Fighters, 1,000 workers

Baltimore County (police), Baltimore County, MD; Police (FOP-Ind.), 1,400 workers

Connecticut State (police), Connecticut; Connecticut State Police Union (Ind.), 1,000 workers

Florida State (law enforcement), Florida; Florida Police Benevolent Association (Ind.), 2,700 workers

Florida State (security and correction officers), Florida; Police Benevolent Association (Ind.), 13,765 workers

Hawaii State (firefighters—unit 11), Hawaii; Fire Fighters, 1,550 workers

Hawaii State (police), Hawaii; State of Hawaii Organization of Police (Ind.), 2,000 workers

Indiana State (police), Indiana; Indiana State Police Alliance, Conservation, and Excise Coalition, Inc. (Ind.), 1,160 workers

Iowa State (security), Iowa; State, County and Municipal Employees, 2,000 workers

New Jersey (state troopers), New Jersey; State Troopers Fraternal Association of New Jersey, Inc., 1,450 workers

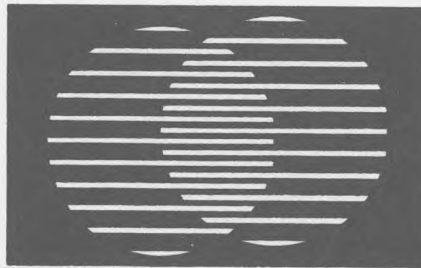
Pennsylvania State (nonsupervisory correctional officers and aides), Pennsylvania; State, County and Municipal Employees, 1,900 workers

Riverside County (sheriffs and correction officers), Riverside County, CA; Riverside County Sheriffs Association (Ind.), 13,765 workers

San Diego city (police), San Diego, CA; Public Officers Association (Ind.), 1,800 workers

Wisconsin State (public safety and security), Wisconsin; State, County and Municipal Employees, 3,600 workers

Developments in industrial relations



Boeing settles on second try

Members of the Seattle Professional Engineering Employees Association, in a second ratification vote, accepted the same 3-year collective bargaining agreements they rejected last December. The pacts covered about 15,000 scientists and engineers and 13,400 technical employees in California, Florida, Oregon, Texas, Utah, and Washington.

Wages, cost-of-living adjustments, medical benefits, and job security were key bargaining issues in the negotiations. The union had sought salary adjustments to bring engineers' and technical workers' pay up to industry averages, full cost-of-living protection, improved health care coverage, an agency fee provision requiring nonunion workers to pay for the services the union must provide as their bargaining agent, time and one-half or double-time for overtime, and career development for professional employees.

Terms of the contract for the technical unit called for general wage increases of 4 percent in the first year and 2 percent in each of the following 2 years, as well as selective salary adjustments (potential merit pay increases) of 5 percent in the first year and 3 percent in each of the following 2 years. The agreement for the professional unit provided selective wage adjustments of 3 percent in December 1992 and June 1993, followed by four semiannual adjustments of 2.5 percent. In addition, both contracts continued cost-of-living clauses and included, in the first year, a lump-sum

bonus equal to 6 percent of an employee's qualified earnings.

Boeing agreed to continue to pay the full costs of medical and dental coverage for employees and their dependents, with no change in deductibles. Negotiators made several changes in medical and dental benefits, some involving cost-containment measures. They agreed to offer a preferred provider organization health care plan with 100-percent coverage after the employee reaches the deductible. The parties increased employee copayments for health insurance benefits from 20 percent to 30 percent of costs for nonpreferred provider physicians and hospitals in areas with preferred provider organizations, with maximum out-of-pocket expenses of \$1,000 for individual coverage and \$2,000 for family coverage. Negotiators established a preferred pharmacy drug card program, with reimbursement at 90 percent for purchases of generic drugs and 80 percent for brand name drugs when the drug card is used and 70 percent when the drug card is not used; instituted a new referral service for substance abuse, mental health, and eating disorders, effective in May 1993; and enhanced dental benefits by updating the covered benefit amounts and increasing the annual dental maximum from \$1,500 to \$2,000 and the lifetime orthodontic maximum from \$1,500 to \$1,700.

The parties negotiated several changes in other benefit areas. Employees would be paid for half of unused sick leave accrued at the time of retirement or death. They also would receive the highest retirement benefits calculated by the basic benefit formula, the current alternate formula, or the pre-1989 alternate benefit formula. Employees opting for basic formula benefits would receive \$35 a

month, up from \$30, for each year of credited service. Participants in the Voluntary Investment Plan would have more flexible rollover options to contribute to, or withdraw from, IRA's and other qualified plans, would be able to borrow up to 50 percent of the total vested value of their accounts, and would be eligible to carry two loans against their accounts at one time.

Other terms retained the maintenance of membership clause, but with one open period instead of two; provided 36 holidays over the term of the contract; eliminated the union's right to grieve jurisdictional disputes; established a joint committee on Oversight of Cooperative Initiatives, such as career enhancement, alcohol and drug abuse, and performance management; removed the labor grade reduction provision in the professional unit's contract; and enhanced union security provisions.

Boeing recently completed a year-long program cutting 9,000 jobs through attrition and layoffs. The company also recently announced that it would cut between 15,000 and 20,000 additional jobs this year and expects to eliminate more next year. The reductions result from the elimination of three missile programs, the scaling back of production of the B-2 stealth bomber, and cutbacks in the production of the 737 commercial jet.

Rohr, Machinists settle

Negotiators for Rohr Industries, Inc. and Locals 755 and 964 of the International Association of Machinists signed 3-year collective bargaining agreements covering 3,170 production and maintenance workers in Riverside and Chula Vista, CA. Rohr manufactures engine systems and components for aircraft and solid rocket motors.

"Developments in Industrial Relations" is prepared by Michael H. Cimini and Susan L. Behrmann of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

The contracts called for lump-sum bonuses of \$600 in April 1993 and \$1,000 in August 1993; wage increases of 2.5 percent in August 1994 and 3 percent in August 1995; and continuation of a cost-of-living clause that provides quarterly adjustments equal to 1 cent an hour for each 0.3-point increase in the Consumer Price Index for Wage Earners and Clerical Workers (CPI-W).

The parties agreed to offer employees a choice of four health care plans, including the Aetna Select Choice 80 Percent Plan. This plan features primary care physicians associated with hospitals and medical groups in San Diego County, with employee copayments of 20 percent, to a maximum of \$850 annually per individual and \$1,700 per family, a \$10 copayment for doctor's office visits, a \$15 emergency room copayment, and a \$10 prescription copayment. Negotiators also replaced one of their dental plans with a new optional pre-paid dental plan and retained the Rohr dental plan with no further employee contributions.

Negotiators changed several other benefits: they increased the monthly pension rate, from \$30 to \$33 per year of credited service; boosted life insurance and optional accidental death and dismemberment benefits from \$16,000 to \$19,000; and established an optional long-term disability plan, with two-thirds pay for up to 90 days and a 50-50 split of premiums. Bargainers also raised employees' maximum weekly investment in the savings plan, from \$30 to \$35, and reduced Rohr's matching of employees' investment in the plan, from 50 to 25 percent.

Other terms included changing and combining job classifications, which may result in upgrades for many employees; improving paid vacations and vacation accrual; eliminating the required 5-day notice for personal leave; and enhancing provisions for transfer requests, leave of absence, and seniority rights in layoffs.

Container manufacturers settle

The United Steelworkers' Container Industry Conference approved settle-

ments with two major container manufacturers, American National Can Co. and Crown, Cork, and Seal Co. The 5-year collective bargaining agreements cover nearly 4,000 production and maintenance workers nationwide.

The pacts called for wage increases of 1 percent in 1995 and 1996, and quarterly cost-of-living adjustments (COLA's) equal to 1 cent an hour for each 0.3-point increase in the Consumer Price Index for Wage Earners and Clerical Workers. COLA payments in the first 2 years will be rolled-in to the basic wage rates in the third year.

Negotiators made several changes in health care. At American National Can, they instituted a new managed health care plan, including substance abuse and psychiatric treatment programs, with participants' costs limited to \$10 per office visit and non-participants' costs to 10 percent of medical expenses up to a maximum of \$1,000 a year for single coverage and \$2,000 a year for family coverage. Employees in areas where a managed health care program cannot be established would retain "first dollar coverage."

The contract continued the group health care plan at Crown, Cork, and Seal, but made some modifications. Negotiators added substance abuse and psychiatric treatment programs, increased the lifetime maximum on major medical benefits from \$50,000 to \$500,000, established annual maximum out-of-pocket expenses of \$1,000 for individual coverage and \$1,500 for family coverage, and raised the annual deductible from \$50 to \$100 per individual.

Other changes in benefits included a \$3 increase in the monthly pension rate (to between \$27.50 and \$31.50 at American National Can and \$28.50 and \$32.50 at Crown, Cork, and Seal) per year of credited service, a \$14,000 increase (to \$40,000) in life insurance benefits, a \$75 increase (to between \$310 and \$370 a week) in accident and sickness benefits, and a \$3,500 increase (to \$7,500) in accidental death and dismemberment benefits. The contract also established joint committees to study issues related to job

security, productivity, and labor-management communications.

Flight attendants settle at USAir

Negotiators for USAir and the Association of Flight Attendants ended 12 days of marathon bargaining sessions with agreement on a 45-month labor contract, covering some 9,000 flight attendants nationwide. The major sticking points in negotiations were the carrier's proposals to cut wage rates temporarily, force new employees to contribute to health care costs and pension funding, and extract other cost-saving measures.

Negotiations began in the summer of 1989 to replace a contract that became amendable in August of that year. The talks were conducted under the Railway Labor Act, the Federal law that governs collective bargaining in the airline industry. The settlement was reached with the assistance of the National Mediation Board, the Federal agency that administers the act.

The pact called for 1-year wage cuts of up to 2.9 percent for senior (A-scale) flight attendants and of less than 1 percent for less senior (B-scale) flight attendants, followed by wage increases in April 1994, January 1995, and January 1996 that would raise USAir flight attendants' pay to industry standards. In addition, the contract would halt the longevity progression for senior flight attendants at their current step for 1 year, and add a 14th step to their progression after that year.

The contract also established a managed health care plan identical to the one negotiated by the Pilots and Machinists, the two other unions at the carrier, with employee contributions of \$38 a month for participants for family coverage and \$107 a month for nonparticipants. The terms also included new stock-option and profit-sharing plans to compensate flight attendants for the 1-year pay and benefit cuts; use of the highest earnings in 3 of the last 10 years, instead of only the last year, to compute pension benefits; an agreement to allow pregnant flight attendants to continue working until a doctor certifies disability; and a 9-month

moratorium on imposing the carrier's weight restrictions policy.

US Air had settled in 1992 with the Air Line Pilots Association and the Machinists. The parties traded off similar cost-saving measures, such as 1-year wage cuts, benefit contributions, and work rules changes, for enhanced job security and stock-option and profit-sharing plans. (See *Monthly Labor Review*, August 1992, pp. 60-61 and January 1993, p. 28.)

Shipyard agreement

Litton Industries' Ingalls Shipbuilding Division and the Metal Trades Council, bargaining for nine local unions, reached agreement on a 3-year labor contract covering some 10,000 workers at the company's shipyard in Pascagoula, MS. The unions represented by the council included locals of the Boilermakers and Forgers; Plumbers and Pipefitters; Machinists; Operating Engineers; Sheet Metal Workers; Laborers; Teamsters; Carpenters and Joiners; and Painters.

Terms of the new contract called for wage increases of 55 cents an hour immediately, 32 cents an hour in February 1994, and 35 cents an hour in February 1995. At the time the new contract was signed, the average wage rate for these metal trades workers was \$12.48 an hour.

Negotiators changed several benefits. They froze the defined contribution pension plan and established a tax-deferred supplemental pension investment program effective in June 1993, under which employees can invest up to 14 percent of their earnings (the company will not make matching contributions); increased employee payments toward health insurance premiums by \$10 over the term of the contract (to \$35 a month); changed deductibles for major medical benefits, from \$300 for single coverage and \$400 for family coverage to a flat rate of \$325 for all types of coverage; and increased life insurance benefits from \$15,000 to \$18,000 and weekly sickness and accident benefits from \$160 to \$175 over the term.

Nursing homes approve accord

Negotiators for Beverly Enterprises, the Nation's largest nursing home chain, and three locals of the Service Employees International Union signed 3-year collective bargaining agreements covering 1,500 workers at 18 nursing homes in Pennsylvania. The union hoped to use the settlements, which provide wage and health care benefit increases and funding for potential pension plans, as a pattern for contracts that cover an additional 3,500 nursing home employees in Pennsylvania. The major sticking point in negotiations involved the union's proposal to establish a pension plan.

The contracts called for wage increases ranging from between 21 percent and 41 percent over the term of the agreement, with larger increases going to employees of four recently organized nursing homes. The average hourly rate for employees at previously organized homes ranged between \$6.50 and \$7.50.

Although the unions were unable to negotiate a defined benefit pension plan, the company agreed to begin contributing 5 cents per hour for each employee in the second year of the contract and 10 cents per hour in the third year, while the company conducts a pension plan feasibility study. The funds initially would be put in a savings plan, bank account, or other mutually acceptable investment until the company completes its review of the pension proposal. The company's agreement to contribute to an investment program "sets the stage for establishing a pension, something that...has been missing in the private, for-profit nursing home sector," according to the union's chief negotiator.

The union also was able to negotiate enhanced health care benefits and extend them to all employees. Employees under the optional health maintenance organization plans, which have been established only in urban areas, would have their biweekly contributions toward health insurance premiums reduced from varying levels to \$15 for single coverage, \$20 for an employee with one child, \$30

for an employee and spouse, and \$40 for family coverage. Effective in July 1994, equivalent benefits will be provided to employees in rural areas.

The settlement also called for each nursing home to establish a health and safety committee with authority to investigate conditions and make recommendations subject to the contracts' grievance procedures; enhanced sick leave policy; and improved paid vacations.

Wage cuts pave way for buyout

Members of two locals of the United Food and Commercial Workers ratified collective bargaining agreements providing for wage cuts necessary to ensure a buyout by the Great Atlantic & Pacific Tea Co. (A&P) of Grand Union Co.'s 48 Big Star grocery stores in the Atlanta, GA, area.

A&P previously had a small market share in the Atlanta area, with only 16 stores, and needed additional stores to compete more effectively with Kroger and Winn-Dixie, the area's two largest grocery chains.

The company had indicated that it would sell off its stores, possibly to a nonunion operator, or close the stores. The unions' main objective in the negotiations was to save as much wages as possible and maintain health and welfare benefits, according to the president of Local 442, which bargained for nearly 700 meat, deli, bakery, and seafood department employees.

Terms of the pacts called for wage reductions of up to \$2.65 an hour (to \$8.30 an hour) in the top rate for retail clerks, with most clerks taking an hourly wage cut of between 10 cents and 50 cents. Higher pay scales for meat, deli, bakery, and seafood department employees would be changed from those based on straight time wage rates and sales volume to pay scales based exclusively on straight time wage rates, with reductions in rates for most job classifications. As such, journeylevel meatcutters' pay would drop about \$2.15 an hour, while junior meatcutters' rates would increase by about 5 cents to 10 cents an hour.

Teamsters settle at Gwaltney

Gwaltney of Smithfield and Local 822 of the Teamsters signed a 4-year collective bargaining agreement covering 1,800 production and maintenance employees and truck drivers at the company's plants in Smithfield and Portsmouth, VA. Gwaltney is a meat-packing company headquartered in Smithfield.

The settlement provided general wage increases of 25 cents an hour retroactive to February 5, 1993, 25 cents an hour in February 1994 and 1995, and 40 cents an hour in February 1996. In addition, the interplant driver job classification was upgraded and its base rate was raised from \$7.56 to \$9.51 an hour. At the expiration of the previous contract, hourly wage rates ranged from \$6.76 to \$8.38 for production workers and from \$7.96 to \$11.79 for maintenance workers.

Negotiators made several modifications in health and welfare benefits. They increased lifetime maximum medical benefits over the term of the contract from \$25,000 to \$100,000; disability benefits from \$60 to \$75 a week; the monthly pension rate for future service from \$8 to \$10 per year of credited service; and life insurance benefits from \$12,000 to \$14,000. The parties increased employees' share of health insurance premiums over the term, from no cost to \$4.50 a week for single coverage, from \$1.75 to \$6.25 a week for an employee with two or fewer dependents, and from \$2.93 to \$8.25 a week for an employee with more than two dependents. They also increased the health insurance deductible over the term from \$100 per person to \$175 for single coverage and \$400 for family coverage; and modified the employee copayment for prescription drugs, from \$5 per prescription to 10 percent of prescription costs for generic drugs and 20 percent for brand names, up to \$5 and \$10, respectively, for a 90-day supply.

Accord at GTE North

Negotiators for GTE North in Wisconsin and the Communications Workers signed a 3-year collective bargaining agreement covering about 1,250 service, engineering and construction,

and supply department employees and office-clerical workers.

The contracts provided wage increases of 4 percent immediately, 4 percent in January 1994, and 2 percent in January and July 1995. In addition, the settlements upgraded several job classifications, including establishing new jobs such as facility technician and customer care technician.

The negotiators made several modifications in benefits. These changes included an increase in employees' health care copayments from 10 percent to 20 percent; the addition of a new supplemental health care program for employees aged 60 to 65; and an increase in annual pension benefits, from \$8,850 to \$10,000 for employees with 40 years of service, from \$6,750 to \$7,600 for employees with 30 to 35 years of service, and from \$3,600 to \$4,000 for employees with between 15 and 20 years of service. Other benefit terms included optional lump-sum pension payoffs; a "living benefit" provision under life insurance coverage; and optional long-term disability coverage.

Tropicana negotiates child care

Members of Local 173 of the Teamsters ratified a 3-year collective bargaining agreement with Tropicana Products, Inc. that provides child care assistance for the first time for the 1,700 workers at the company's plants in Bradenton and Fort Pierce, FL. Under terms of the pact, Tropicana would provide referral, follow-up, and educational services through Project Child Care.

The contract also called for general wage increases of 4 percent in the first year and 3 percent in the second and third years, and annual lump-sum bonuses equal to 1 percent of an employee's gross earnings. The hourly wage rates ranged from \$8.70 to \$13.45 before the first wage increase took effect.

The contract includes several changes in health care provisions. Active employees' weekly premiums for health insurance were increased from \$2.25 to \$3.25 over the term of the agreement for single coverage and from \$4.50 to \$6.50 for family cover-

age, while retirees' weekly premiums were increased to \$15 and \$30, from between \$9 and \$25. The annual deductible was boosted over the term by \$50, to \$150, for single coverage and by \$150, to \$450, for family coverage. A \$3,000 maximum "out-of-pocket" expense limit was established for family coverage. Other changes included a \$250,000 increase (to \$750,000) in lifetime maximum medical benefits; a \$200 increase, to \$1,200, in lifetime maximum orthodontic benefits; a \$5 increase in the vision benefit schedule; and increased reimbursement for generic drugs.

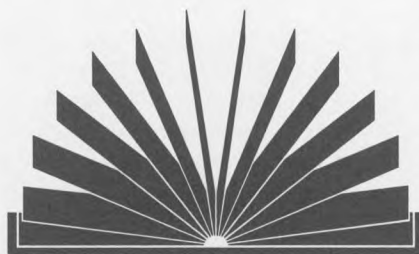
Negotiators agreed to several enhancements in other benefits. Life insurance coverage was increased by \$5,000, to \$20,000, for active employees and \$1,000, to \$8,500, for retirees. In addition, accidental death and dismemberment benefits were raised \$10,000, to \$40,000 and weekly disability benefits were boosted by \$30-\$60, to \$230-\$260. The pension plan was enhanced by adding survivors benefits for dependent children of deceased employees who were vested participants in the pension plan.

Settlements at TWA

Approximately 25,000 unionized employees at TWA, represented by the Air Line Pilots Association, the International Association of Machinists, and the Independent Federation of Flight Attendants, ratified 3-year collective bargaining agreements that are expected to help the carrier emerge from Federal bankruptcy court protection it has been under since January 1992. The pacts also required approval from the Pension Benefit Guaranty Corporation because of the carrier's alleged \$1.2 billion underfunding of employee pension plans.

Terms of the agreements call for majority owner and chairman Carl Icahn to relinquish control of the carrier to its creditors and employees in exchange for a 15-percent cut in wages and benefits and changes in work rules advantageous to the airline. TWA's creditors previously had agreed to waive approximately \$1 billion of the \$1.5 billion owed in exchange for 55 percent of the carrier's equity. □

Book reviews



Miners, well off?

Soft Coal, Hard Choices: The Economic Welfare of Bituminous Coal Miners, 1890-1930. By Price V. Fishback. New York, Oxford University Press, Inc., 1992, 279 pp. \$39.95.

An economist, according to one anecdote, looks at something that works and wonders if it would apply in theory. This book, written from an econometric or cliometric viewpoint—stressing hard empirical economic data to describe historical events—could be described similarly.

Author Price V. Fishback claims he has destroyed many myths other scholars have created about the lives and culture of coal miners in the United States. His hypotheses offer new insights into the study of the economic history of the coal industry, but they supplement what we already know about the life and work of miners, rather than provide the definitive answer to questions about this aspect of labor history.

As the title implies, Fishback contends that labor market participants in the soft coal, or bituminous, industry at the turn of the century fared better than workers in most manufacturing settings and had conscious alternatives to employment in the mines. Based on his findings, high wages, guaranteed housing in rural areas, sufficient leisure time, and considerable control over the work process made employment in the industry attractive to unskilled and skilled workers.

In contrast to these conditions were economic fluctuations in real earning power, poor living conditions in some communities, minimal exploitation at

the infamous “company store,” and dangerous working conditions. But miners could express their discontent by leaving worksites for better employment prospects or by unionization and collective action, according to Fishback.

Fishback uses a wealth of qualitative and quantitative resources to construct this thesis. He has placed his econometric model against the theories of other scholars and through extensive analysis, refutes most of their findings that miners toiled under a system of industrial serfdom. Unfortunately, this provocatively written analysis does not prove its stated purpose. The author’s chapter conclusions are filled with inconclusive statements that quantitative and qualitative data compilations “possibly show,” “might explain,” and “could be the reasons for” a variety of aspects of worklife. This type of analysis raises more questions than it answers. The book claims its goal is to combine the old and new economic histories, but that link is never formed.

In fact, the findings of other scholars appear to be misinterpreted in some instances to fit the author’s model. For example, particular issue is taken with David Corbin’s findings in *Life, Work, and Rebellion: The Southern West Virginia Miners, 1880-1922*, concerning abysmal conditions that led miners to join the United Mine Workers of America (UMWA) despite opposition from mine owners who used mercenary police. According to Fishback, even Corbin’s pro-union sympathies cannot conceal the preference of some West Virginia coal miners for company-sponsored benefits over those offered by the UMWA as

proof that conditions were not that bad in the coal communities. But Corbin’s statement was that Appalachian coal diggers were fiercely independent despite being among the staunchest UMWA members. *Soft Coal, Hard Choices* tends to cloud analysis to fit a preordained prescription.

Following this pattern, some facets of the story appear to have been omitted. For example, Fishback attributes improved conditions and benefits in many coal mine communities not necessarily to “welfare capitalism,” but to good business practices of protecting and maintaining a valuable commodity—the labor factor in the employer-employee equation. He correctly notes that this is intended to provide a quality work site and better than average working conditions to counter benefits offered by the UMWA. But Fishback fails to mention that many employers even worked with the UMWA to avoid the more radical demands of the anticapitalist Industrial Workers of the World, known as the Wobblies.

The major problem with this work is not its research, but its format and use of the data findings. Cliometric analysis is not a new concept. It gained limited popularity in the early 1970’s and reached a benchmark in 1974 with the publication of Robert Fogel and Stanley Engerman’s highly controversial *Time on the Cross*. Fogel and Engerman concluded that African-American slaves, based on plantation and local government documentation, suffered far less than the historical record has led us to believe.

The authors claimed that some indentured actually lived fairly well for their particular historical period, and

better than some poor white working-class individuals. Yet it is hard to fathom a just and democratic system of enslavement, regardless of socioeconomic status. Like the slaves, some coal miners may have had a better place on the economic ladder of the American industrial system than previously acknowledged, but the conditions of coal communities, for the most part, were below accepted standards of decency.

This book warrants reading, and has a definite place in labor historiography and labor economics. The idyllic workplaces of the original factory system at Lowell and Waltham, MA, were a far cry from the exploitive system of child labor that developed later. The textile, transportation, and mining industries began workplace reforms that provided a framework for protective labor legislation in the New Deal period of the 1930's.

But reform merged from a pressing need to correct the evils of an unregulated system of which the coal industry was a vital part. This work should be read with caution. In the words of the late Supreme Court Justice Thurgood Marshall, its "analytical sleight-of-handedness" should be evident to the reader. *Soft Coal, Hard Choices* illustrates that coal families in the early part of the 20th century had some rights and choices in their work, but the process was dramatically more arduous and economic freedom less abundant than this book claims.

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Challenges for working mothers

Women's Two Roles: A Contemporary Dilemma. By Phyllis Moen. New York, Auburn House, 1992, 172 pp. \$45, cloth; \$16.95, paper.

Phyllis Moen has incorporated in her book the findings of an exceptional amount of research about women's roles at home and at work. Many of the more than 500 entries in the 31-page bibliography are empirical research studies; the book is essentially a tapestry of research findings woven into the fabric of an integrated text that makes for stimulating reading.

Moen goes beyond the usual array of issues such as dependant care and alternative work schedules. She focuses on mothers, fathers, and children, presenting a psychological evaluation of the effects of work on decisions regarding the family.

The book is well organized; its three sections, "The Issue in Context," "Consequences," and "New Directions," provide information in an orderly fashion to help readers evaluate the implications of work on women's behavior at home and in the labor force. The first two sections convey information from a wide array of research studies conducted between 1946 and 1992, a period in which the behavior of women and men shifted significantly. It should be noted that the variety of research designs and the extensive time period these studies span sometimes result in conflicting findings.

Because social behavior has changed and research findings that were accurate for one period may not describe the situation correctly at a later time, the effects of behavior shifts over time could not be clearly ascertained in all cases. For example, Moen believes that only tentative conclusions may be drawn from research about working mothers: daughters appear to have benefited from working mothers more than have sons; mothers' employment outside the home may have negative effects on sons; and a mother's employment affects not only the mother-child relationship, but also the father-child relationship.

Moen draws other tentative conclusions: a mother's attitude toward

employment may be more important than the employment itself; the characteristics of a mother's job (for example, part-time versus full-time) are essential in examining the effect on children; and young children who are cared for in a group environment get sick more frequently than those cared for in a home environment. But this colorless list of findings belies the variety and scope of research incorporated in the book.

The final section, "New Directions," which includes a chapter on conclusions and implications, is somewhat weaker than the previous sections because of its lack of research findings. This chapter presents a summary of positions and proposed solutions to the work and family dilemma that is the heart of the book. The author outlines the costs, the scarcity of time, and the difficulties in arranging for child care. She also discusses the benefits of working mothers—the gains to families as women add to the family income and fathers share in the care of children, and the increases to the national economy resulting from women's increased productive capacity.

The conflicting needs of families and employment present dilemmas for women, according to Moen. Work-family conflicts are so formidable, she says, that 62 percent of working mothers surveyed in Washington, DC, said they would give up their jobs if they could afford the financial loss.

Although all sides of the issues are conveyed carefully, the recommended solution seems to favor an unrealistic resolution. For example, Moen suggests that we "rethink and redesign not only the structure of work, but also the configuration of the life course which could lead to a variety of arrangements including a return to school at various ages and a continuation of paid work well beyond the usual age of retirement." She believes that rethinking the sequence of education, work, and retirement could lead to government intervention (through

employer tax incentives and other inducements) to give women and men more time at home for child-rearing. Such re-ordering might be achieved with flexible timing for school, a slower track at work for both women and men, and retirement at an age older than the traditional retirement age. This means that parents would have to defer earnings or would have reduced earnings until they complete their child-rearing responsibilities. However, this is unrealistic because, for most parents, earning a living cannot be deferred until a more "convenient" time, due to the demands of providing for a family. Sabbaticals do not exist for eating or paying the rent or doctor bills. Also health problems may force workers into early retirement, making it impossible to work additional years to compensate for earlier periods of "leisure" when more time was needed for child care.

The other solutions Moen outlines—"Traditional Family," "Male Model," "New Man," and "Technological" solutions—have drawbacks that she describes clearly.

Another shortcoming is the book's graphic presentation of data. At the start, statistical data are presented in line graphs. The years designated on the horizontal scale are represented by units of different sizes in several places, which can be misleading. For example, the shape of the curve depicted in one figure would be quite different if equal units on the time scale had been used.

The author admits that "realistically, there is most probably no single solution to the work/family dilemma," and that "given the diversity in women's (and men's) lives in families, and in jobs, a smorgasbord of options and alternatives may well be necessary." A corollary to this observation could be that a realistic option for government and one that may be feasible with limited resources, is to provide more information to the public about the choices between home and work that individuals and families face, and the costs and benefits associated with the alternatives.

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Publications received

Economic growth and development

Anand, Sudhir and Martin Ravallion, "Human Development in Poor Countries: On the Role of Private Incomes and Public Services," *The Journal of Economic Perspectives*, Winter 1993, pp. 133-50.

Freeman, Richard B., *What Direction for Labor Market Institutions in Eastern and Central Europe?* Cambridge, MA, National Bureau of Economic Research, Inc., 1992, 51 pp. (Working Paper 4209.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Pennar, Karen, "Can This Man Answer Economics' Prime Question?" *Business Week*, Dec. 14, 1992, pp. 65-66.

Shah, Ashish, "Cooperative Law: An Instrument for Development?" *International Labour Review*, Vol. 131, No. 4-5, 1992, pp. 513-24.

van Imschoot, Marc, "Water as a source of employment," *International Labour Review*, Vol. 131, No. 1, 1992, pp. 125-37.

Economics and social statistics

Israel Central Bureau of Statistics, *Monthly Bulletin of Statistics*, Jerusalem, Israel, Central Bureau of Statistics, September 1992; and *Supplement*. 133 pp. and 146 pp., respectively.

— *Monthly Bulletin of Statistics*, Jerusalem, Israel, Central Bureau of Statistics, October 1992; and *Supplement*. 134 pp. and 210 pp., respectively.

— *Monthly Bulletin of Statistics*, November 1992, with Supplement. 129 and 88 pp., respectively.

— *Monthly Bulletin of Statistics*, December 1992, with Supplement. 133 and 141 pp., respectively.

Republic of China, *Monthly Bulletin of Earnings and Productivity Statistics, Taiwan Area, Republic of China*, October 1992. Taiwan, Republic of

China, Directorate-General of Budget, Accounting and Statistics, 140 pp. (Report No. 228.)

— *Monthly Bulletin of Earnings and Productivity Statistics, Taiwan, Republic of China*, December 1992, Taiwan, Republic of China, Directorate-General of Budget, Accounting and Statistics, 140 pp. (Report No. 230.)

Symposium: Keynesian Economics Today. "Symposium on Keynesian Economics Today," By N. Gregory Mankiw; "The New Keynesian Synthesis," by David Romer; "New and Old Keynesians," by Bruce Greenwood and Joseph Stiglitz; "Price Flexibility and Output Stability: An Old Keynesian View," by James Tobin; "Will the New Keynesian Macroeconomics Resurrect the IS-LM Model?" by Robert G. King, *The Journal of Economic Perspectives*, Winter 1993, pp. 3-82.

Waldrop, Judith, "Choose the Income That's Right for You," *American Demographics*, December 1992, pp. 9-10.

Education

Blackburn, McKinley L. and David Neumark, *Are OLS Estimates of the Return to Schooling Biased Downward? Another Look*. Cambridge, MA, National Bureau of Economic Research, Inc., 1993, 25 pp. (Working Paper 4259.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Diamond, Arthur M., Jr. and Donald R. Haurin, "The Dissemination of Research Agendas among Young Economists," *Journal of Economic Education*, Winter 1993, pp. 53-61.

Kourilsky, Marilyn, "Economic Education and a Generative Model of Mislearning and Recovery," *The Journal of Economic Education*, Winter 1993, pp. 23-33.

Sexton, Robert L., Philip E. Graves, and Dwight R. Lee, "The Short- and Long-Run Marginal Cost Curve: A Pedagogical Note," *Journal of Economic Education*, Winter 1993, pp. 34-37.

Shen, Ruth and T. Y. Shen, "Economic Thinking in China: Economic Knowledge and Attitudes of High School Students," *Journal of Economic Education*, Winter 1993, pp. 70-84.

Van Scyoc, Lee J. and Joyce Gleason, "Traditional or Intensive Course

Lengths? A Comparison of Outcomes in Economics Learning," *The Journal of Economic Education*, Winter 1993, pp. 15-22.

Health and safety

Curran, Daniel J., *Dead Laws for Dead Men: The Politics of Federal Coal Mine Health and Safety Legislation*. Pittsburgh, PA, University of Pittsburgh Press, 1993, 208 pp., bibliography. \$39.95.

Kenen, Regina H., *Reproductive Hazards in the Workplace: Mending Jobs, Managing Pregnancies*. New York, Harrington Park Press, 1993, 306 pp. \$19.95, paper.

Industrial relations

Ackers, Peter and others, "The use of cycles: explaining employee involvement in the 1990s." *Industrial Relations Journal*, Vol. 23, No. 4, Winter 1992, pp. 268-83.

Adler, Paul S., "Time and Motion Regained," *Harvard Business Review*, January-February 1993, pp. 97-108.

Buchanan, R. T., "Measuring mergers and concentration in UK unions, 1910-88," *Industrial Relations Journal*, Vol. 23, No. 4, Winter 1992, pp. 304-14.

Campbell, Joan, ed., *European Labor Unions*. Westport, CT, Greenwood Press, 1992, 648 pp. \$125.

Clausen, Christian and Borge Lorentzen, "Workplace implications of FMS and CIM in Denmark and Sweden," *New Technology, Work and Employment*, March 1993, pp. 21-30.

Conti, Robert F. and Malcolm Warner, "Taylorism, new technology and just-in-time systems in Japanese manufacturing," *New Technology, Work and Employment*, March 1993, pp. 31-42.

Cradden, Terry, "The Tories and employment law in Northern Ireland: seeing unions in a different light?" *Industrial Relations Journal*, March 1993, pp. 59-70.

Dunlop, John T., *Industrial Relations Systems*. rev. ed., Cambridge, MA, Harvard Business School Press, 1993, 353 pp., \$39.95, cloth; \$24.95, paper.

European Trade Union Institute, *European Trade Union Institute Bulletin*, Brussels, February 1993. 53 pp.

Finkin, Matthew W., *The Benjamin Aaron Annual Lecture Series on the Role of Public Policy in the Employment Relationship: Privacy and Personality in the Employment Relationship*. Los Angeles, University of California, Institute of Industrial Relations, 1992, 20 pp.

Gall, Gregor, "What happened to single union deals?—a research note," *Industrial Relations Journal*, March 1993, pp. 71-75.

Hammer, Tove H. and David L. Wazeter, "Dimensions of Local Union Effectiveness," *Industrial and Labor Relations Review*, January 1993, pp. 302-19.

Hughes, Stephen, "Living with the past: trade unionism in Hungary since political pluralism," *Industrial Relations Journal*, Vol. 23, No. 4, Winter 1992, pp. 293-303.

Jones, Timothy L., *The Americans with Disabilities Act: A Review of Best Practices*. New York, American Management Association, 1993, 122 pp. \$10, paper (AMA Management Briefing).

Kumar, Pradeep and Lynn Acri, "Unions' Collective Bargaining Agenda on Women's Issues: The Ontario Experience," *Industrial Relations*, Vol. 47, No. 4, 1992, pp. 623-53

Lewin, David, Olivia S. Mitchell, and Peter D. Sherer, eds., *Research Frontiers in Industrial Relations and Human Resources*. Madison, WI, Industrial Relations Research Association, 1992, 625 pp.

Lumley, Roger, "Business education and employment relations: the case of Germany," *Industrial Relations Journal*, Vol. 23, No. 4, Winter 1992, pp. 284-92.

Metcalf, David, Jonathan Wadsworth, and Peter Ingram, "Multi-unionism, size of bargaining group and strikes," *Industrial Relations Journal*, March 1993, pp. 3-13.

Ogden, Stuart, "Decline and fall: national bargaining in British water," *Industrial Relations Journal*, March 1993, pp. 44-58.

Ponak, Allen and Corliss Olson, "Time Delays in Grievance Arbitration," *Industrial Relations*, Vol. 47, No. 4, 1992, pp. 690-707.

Rose, Ed and Ted Wooley, "Shifting sands? trade unions and productivity at Rover Cars," *Industrial Relations Journal*, Vol. 23, No. 4, Winter 1992, pp. 257-67.

Swidinsky, Robert, "Unionism and the job attachment of Canadian workers," *Industrial Relations*, Vol. 47, No. 4, 1992, pp. 729-51.

Industry and government

Baily, Martin Neil, Gary Burtless, Robert E. Litan, *Growth with Equity: Economic Policymaking for the Next Century*. Washington, DC, The Brookings Institution, 1993, 239 pp. \$31.95, cloth; \$12.95, paper.

Berry, Steven, James Levinsohn, and Ariel Pakes, *Automobile Prices in Market Equilibrium: Part I and II*. Cambridge, MA, National Bureau of Economic Research, Inc., 1993, 45 pp. (Working Paper 4264.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Faris, S. Jackson, ed., *Small Business in the Clinton Years: What Your Company Must Do to Survive and Succeed*. Washington, DC, National Federation of Independent Business, 1993, 190 pp. \$9.95, paper. Available from Hammock Publishing Inc., Nashville, TN.

Fort, Rodney and Robert Rosenman, "Another Look at the Study of Regulatory Forms and Outcomes," *Journal of Economic Education*, Winter 1993, pp. 39-52.

Great Britain, Employment Department, *Employment Department Annual Report on Research, 1992*. Moorfoot, Sheffield, England, Department of Employment, Research Management Branch, 1992, 220 pp.

"This Rebound Just May Be For Real," *Business Week*, Jan. 11, 1993, pp. 56-104.

Tomoda, Shizue, "Recent Developments in the Food and Drink Industries," *International Labour Review*, Vol. 131, No. 4-5, 1992, pp. 431-51.

Book Reviews

International economics

"Activities of the Economic and Social Committee, April, May, and June 1992," *Bulletin of the Economic and Social Committee of the European Communities*, Vol. 2, 1992, 124 pp. Brussels, Economic and Social Committee, Division for Information, Publications and Relations with Socio-Economic Groups.

Bloom, David E. and Adi Brender, *Labor and the Emerging World Economy*. Cambridge, MA, National Bureau of Economic Research, Inc., 1993, 70 pp. (Working Paper 4266.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Clarida, Richard H., "Entry, Dumping, and Shakeout," *The American Economic Review*, March 1993, pp. 180-202.

Fuss, Melvyn, Stephen Murphy, and Leonard Waverman, *The State of North American and Japanese Motor Vehicle Industries: A Partially Calibrated Model to Examine the Impacts of Trade Policy Changes*. Cambridge, MA, National Bureau of Economic Research, Inc., 1992, 42 pp. (Working Paper 4225.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Razin, Assaf and Efraim Sadka, *International Migration and International Trade*. Cambridge, MA, National Bureau of Economic Research, Inc., 1992, 44 pp. (Working Paper 4230.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Schwartz, Rosalind M., ed., *Managing Organizational Transitions in a Global Economy*. Los Angeles, CA, University of California, Institute of Industrial Relations, 1992, 198 pp. \$15, paper. (Monograph and Research Series, 57.)

van Liemt, Gijsbert, ed., *Industry on the Move: Causes and Consequences of International Relocation in the Manufacturing Industry*. Geneva, International Labor Organization, 1992, 336 pp., bibliography. \$28, paper. Available from ILO Publications Center, Albany, NY.

Labor force

Abraham, Katharine G. and Susan N. Houseman, *Job Security in America:*

Lessons from Germany. Washington, DC, The Brookings Institution, 1993, 175 pp.

Axe, Barry and Lonnie Golden, "The Augmented Labor Supply Function: Worktime Evidence from Japan." Reprinted from the *Eastern Economics Journal*, July-September 1991, pp. 305-17.

Berman, Eli, John Bound, Zvi Griliches, *Changes in the Demand for Skilled Labor Within U.S. Manufacturing Industries: Evidence From the Annual Survey of Manufacturing*. Cambridge, MA, National Bureau of Economic Research, Inc., 1993, 54 pp. (Working Paper 4255.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Blanchflower, Daniel and Andrew J. Oswald, *Entrepreneurship, Happiness and Subnormal Returns: Evidence from Britain and the US*. Cambridge, MA, National Bureau of Economic Research, Inc., 1992, 25 pp. (Working Paper 4228.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Coleman, Mary T. and John Pencavel, "Changes in Work Hours of Male Employees, 1940-1988," *Industrial and Labor Relations Review*, January 1993, pp. 262-83.

Crompton, Susan, "Facing retirement," *Perspectives on Labour and Income*, Spring 1993, pp. 31-38.

Devereaux, Mary Sue and Colin Lindsay, "Female lone parents in the labour market," *Perspectives on Labour and Income*, Spring 1993, pp. 9-15.

Dow, Gregory K., "Why Capital Hires Labor: A Bargaining Perspective," *The American Economic Review*, March 1993, pp. 118-34.

Farber, Henry S., *The Analysis of Inter-Firm Worker Mobility*. Cambridge, MA, National Bureau of Economic Research, Inc., 1993, 69 pp. (Working Paper 4262.) (\$5 per copy, plus \$10 for postage and handling outside the United States.

Golden, Lonnie and Eileen Appelbaum, "What Was Driving the 1982-88 Boom in Temporary Employment? Preference of Workers or Decisions and Power of Employers." Reprinted from *The American Journal of Economics and Sociology*, October 1992, pp. 473-94.

Golden, Lonnie, "The Insensitive Workweek: Trends and Determinants of Adjustment in Average Hours." Reprinted from the *Journal of Post Keynesian Economics*, Fall 1990, pp. 79-110.

— "Unions, Nonwage Labor Costs, and the Character of Labor Market Adjustment, 1929-1987." Reprinted from the *Quarterly Review of Economics and Finance*, Summer 1992, pp. 46-70.

Great Britain, Department of Employment, *The Early Careers of 1980 Graduates: Work Histories, Job Tenure, Career Mobility and Occupational Choice*. By P. J. Dolton and G. H. Makepeace. Moorfoot, Sheffield, England, Great Britain Employment Department, Research Management Branch, 1992, 106 pp.

Hamermesh, Daniel S. and Gerard Pfann, *Turnover and the Dynamics of Labor Demand*. Cambridge, MA, National Bureau of Economic Research, Inc., 1992, 15 pp. (Working Paper 4052.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Lee, Judy, "Women in academia--a growing minority," *Perspectives on Labour and Income*, Spring 1993, pp. 24-30.

Margo, Robert A. and T. Aldrich Finegan, "The Decline in Black Teenage Labor-Force Participation in the South, 1900-1970: The Role of Schooling," *The American Economic Review*, March 1993, pp. 234-47.

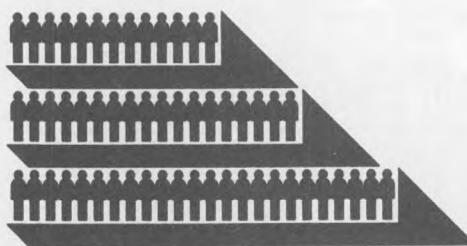
Mitchell, Olivia S., ed., *As the Workforce Ages: Costs, Benefits & Policy Challenges*. Ithaca, NY, ILR Press, Cornell University, 1993, 304 pp., \$18.95, paper, \$42, cloth.

Neumark, David, *Sex Discrimination and Women's Labor Market Interruptions*. Cambridge, MA, National Bureau of Economic Research, Inc., 1993, 37 pp. (Working Paper 4260.) \$5 per copy, plus \$10 for postage and handling outside the United States.

Ransom, Michael R., "Seniority and Monopsony in the Academic Labor Market," *The American Economic Review*, March 1993, pp. 221-33.

Sunter, Deborah, "Working Shift," *Perspectives on Labour and Income*, Spring 1993, pp. 16-23.

Current labor statistics



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Notes on Current Labor Statistics

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics: series on labor force; employment; unemployment; labor compensation; collective bargaining settlements; consumer, producer, and international prices; productivity; international comparisons; and injury and illness statistics. In the notes that follow, the data in each group of tables are briefly described; key definitions are given; notes on the data are set forth; and sources of additional information are cited.

General notes

The following notes apply to several tables in this section:

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect on the data of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might prevent short-term evaluation of the statistical series. Tables containing data that have been adjusted are identified as "seasonally adjusted." (All other data are not seasonally adjusted.) Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted data appear in tables 1-9, 12-14, 16-17, 44, and 48. Seasonally adjusted labor force data in tables 1 and 4-9 were revised in the February 1993 issue of the *Review* and reflect the experience through 1992. Seasonally adjusted establishment survey data shown in tables 12-14 and 16-17 were revised in the July 1992 *Review* and reflect the experience through March 1992. A brief explanation of the seasonal adjustment methodology appears in "Notes on the data."

Revisions in the productivity data in table 44 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month-to-month and quarter-to-quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All-Items CPI.

Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data—such as the "real" earnings shown in table 14—are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current-dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of \$3 and a current price index number of 150, where 1982=100, the hourly rate expressed in 1982 dollars is \$2 ($\$3/150 \times 100 = \2). The \$2 (or any other resulting values) are described as "real," "constant," or "1982" dollars.

Additional information

Data that supplement the tables in this section are published by the Bureau in a variety of sources. News releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule appearing on the back cover of this issue. More information about labor force, employment, and unemployment data and the household and establishment surveys underlying the data are available in *Employment and Earnings*, a monthly publication of the Bureau. Additional data from the household survey are published in the data book, *Labor Force Statistics Derived From the Current Population Survey*, Bulletin 2307. More national data from the establishment survey appear in the data book, *Employment, Hours, and Earnings, United States*, an annual bulletin. More detailed information on employee compensation and collective bargaining settlements is published in the monthly periodical, *Compensation and Working Conditions*. More detailed data on consumer and producer prices are published in the monthly periodicals, *The CPI Detailed Report*, and *Producer Price Indexes*. Detailed data on all of the series in this section are provided in the *Handbook of Labor Statistics*, which is published biennially by the Bureau. BLS bulletins are issued covering productivity, injury and illness, and other data in this section. Finally, the *Monthly Labor Review* carries analytical articles on annual and longer term developments in la-

bor force, employment, and unemployment; employee compensation and collective bargaining; prices; productivity; international comparisons; and injury and illness data.

Symbols

n.e.c. = not elsewhere classified.

n.e.s. = not elsewhere specified.

p = preliminary. To increase the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.

r = revised. Generally, this revision reflects the availability of later data but may also reflect other adjustments.

Comparative Indicators

(Tables 1-3)

Comparative indicators tables provide an overview and comparison of major BLS statistical series. Consequently, although many of the included series are available monthly, all measures in these comparative tables are presented quarterly and annually.

Labor market indicators include employment measures from two major surveys and information on rates of change in compensation provided by the Employment Cost Index (ECI) program. The labor force participation rate, the employment-to-population ratio, and unemployment rates for major demographic groups based on the Current Population ("household") Survey are presented, while measures of employment and average weekly hours by major industry sector are given using nonfarm payroll data. The Employment Cost Index (compensation), by major sector and by bargaining status, is chosen from a variety of BLS compensation and wage measures because it provides a comprehensive measure of employer costs for hiring labor, not just outlays for wages, and it is not affected by employment shifts among occupations and industries.

Data on **changes in compensation, prices, and productivity** are presented in table 2. Measures of rates of change of compensation and wages from the

Employment Cost Index program are provided for all civilian nonfarm workers (excluding Federal and household workers) and for all private nonfarm workers. Measures of changes in consumer prices for all urban consumers; producer prices by stage of processing; overall prices by stage of processing; and overall export and import price indexes are given. Measures of productivity (output per hour of all persons) are provided for major sectors.

Alternative measures of wage and compensation rates of change, which reflect the overall trend in labor costs, are summarized in table 3. Differences in concepts and scope, related to the specific purposes of the series, contribute to the variation in changes among the individual measures.

Notes on the data

Definitions of each series and notes on the data are contained in later sections of these notes describing each set of data. For detailed descriptions of each data series, see *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992), as well as the additional bulletins, articles, and other publications noted in the separate sections of the *Review's* "Notes on Current Labor Statistics." Users may also wish to consult *Major Programs of the Bureau of Labor Statistics*, Report 793 (Bureau of Labor Statistics, 1991).

Employment and Unemployment Data

(Tables 1; 4-20)

Household survey data

Description of the series

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons include (1) all those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff are also counted among the unemployed. The **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons who are retired, those engaged in their own household, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job-market factors, and those who are voluntarily idle. The **civilian noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy. The **civilian labor force participation rate** is the proportion of the civilian noninstitutional population that is in the labor force. The **employment-population ratio** is employment as a percent of the civilian noninstitutional population.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the intercensal years. These adjustments affect the comparability of historical data. A description of these adjustments and their effect on the various data series appears in the Explanatory Notes of *Employment and Earnings*.

Labor force data in tables 1 and 4-9 are seasonally adjusted based on the experience through December 1992. Since January 1980, national labor force data

have been seasonally adjusted with a procedure called X-11 ARIMA which was developed at Statistics Canada as an extension of the standard X-11 method previously used by BLS. A detailed description of the procedure appears in the *X-11 ARIMA Seasonal Adjustment Method*, by Estela Bee Dagum (Statistics Canada, Catalogue No. 12-564E, January 1983).

At the end of each calendar year, seasonally adjusted data for the previous 5 years are revised, and projected seasonal adjustment factors are calculated for use during the January-June period. In July, new seasonal adjustment factors, which incorporate the experience through June, are produced for the July-December period, but no revisions are made in the historical data.

Additional sources of information

For detailed explanations of the data, see *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992), and for additional data, *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989). Historical unadjusted data from 1948 to 1987 are available in *Labor Force Statistics Derived from the Current Population Survey*, Bulletin 2307 (Bureau of Labor Statistics, 1988). Historical seasonally adjusted data are available from the Bureau of Labor Statistics upon request.

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9-20.

Establishment survey data

Description of the series

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by more than 359,000 establishments representing all industries except agriculture. Industries are classified in accordance with the *1987 Standard Industrial Classification (SIC) Manual*. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-em-

ployed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

An **establishment** is an economic unit which produces goods or services (such as a factory or store) at a single location and is engaged in one type of economic activity.

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th day of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in manufacturing include working supervisors and nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 11–16 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in the following industries: transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received, and are different from standard or scheduled hours. **Overtime hours** represent the portion of average weekly hours which was in excess of regular hours and for which overtime premiums were paid.

The Diffusion Index represents the percent of industries in which employment was rising over the indicated period, plus one-half of the industries with unchanged employment; 50 percent indicates an equal balance between industries with increasing and decreasing employ-

ment. In line with Bureau practice, data for the 1-3-, and 6-month spans are seasonally adjusted, while those for the 12-month span are unadjusted. Data are centered within the span. Table 17 provides an index on private nonfarm employment based on 356 industries, and a manufacturing index based on 139 industries. These indexes are useful for measuring the dispersion of economic gains or losses and are also economic indicators.

Notes on the data

Establishment survey data are annually adjusted to comprehensive counts of employment (called "benchmarks"). The latest adjustment, which incorporated March 1991 benchmarks, was made with the release of May 1992 data, published in the July 1992 issue of the *Review*. Coincident with the benchmark adjustments, seasonally adjusted data were revised to reflect the experience through March 1992. Unadjusted data from April 1991 forward and seasonally adjusted data from January 1988 forward are subject to revision in future benchmarks.

The BLS also uses the X-11 ARIMA methodology to seasonally adjust establishment survey data. Beginning in June 1989, projected seasonal adjustment factors are calculated and published twice a year. The change makes the procedure used for the establishment survey data more parallel to that used in adjusting the household survey data. Revisions of historical data will continue to be made once a year coincident with the benchmark revisions.

In the establishment survey, estimates for the 2 most recent months are based on incomplete returns and are published as preliminary in the tables (12–17 in the *Review*). When all returns have been received, the estimates are revised and published as "final" (prior to any benchmark revisions) in the third month of their appearance. Thus, December data are published as preliminary in January and February and as final in March. For the same reasons, quarterly establishment data (table 1) are preliminary for the first 2 months of publication and final in the third month. Thus, fourth-quarter data are published as preliminary in January and February and as final in March.

Additional sources of information

Detailed national data from the establishment survey are published monthly in the

BLS periodical, *Employment and Earnings*. Historically comparable unadjusted and seasonally adjusted data are published in *Employment, Hours, and Earnings, United States, 1909–90*, Bulletin 2370 (Bureau of Labor Statistics, 1991) and an annual bulletin. For a detailed discussion of the methodology of the survey, see *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992). For additional data, see *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20.

Unemployment data by State

Description of the series

Data presented in this section are obtained from two major sources—the Current Population Survey (CPS) and the Local Area Unemployment Statistics (LAUS) program, which is conducted in cooperation with State employment security agencies.

Monthly estimates of the labor force, employment, and unemployment for States and sub-State areas are a key indicator of local economic conditions, and form the basis for determining the eligibility of an area for benefits under Federal economic assistance programs such as the Job Training Partnership Act and the Public Works and Economic Development Act. Insofar as possible, the concepts and definitions underlying these data are those used in the national estimates obtained from the CPS.

Notes on the data

Data refer to State of residence. Monthly data for 11 States—California, Florida, Illinois, Massachusetts, Michigan, New York, New Jersey, North Carolina, Ohio, Pennsylvania, and Texas—are obtained directly from the CPS because the size of the sample is large enough to meet BLS standards of reliability. Data for the remaining 39 States and the District of Columbia are derived using standardized procedures established by BLS. Once a year, estimates for the 11 States are revised to new population controls. For the remaining States and the District of Columbia, data are benchmarked to annual average CPS levels.

Additional sources of information

Information on the concepts, definitions, and technical procedures used to develop labor force data for States and sub-State areas as well as additional data on sub-States are provided in the monthly Bureau of Labor Statistics periodical, *Employment and Earnings*, and the annual report, *Geographic Profile of Employment and Unemployment* (Bureau of Labor Statistics). See also *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992).

Compensation and Wage Data

(Tables 1-3; 21-30)

COMPENSATION AND WAGE DATA are gathered by the Bureau from business establishments, State and local governments, labor unions, collective bargaining agreements on file with the Bureau, and secondary sources.

Employment Cost Index

Description of the series

The **Employment Cost Index (ECI)** is a quarterly measure of the rate of change in compensation per hour worked and includes wages, salaries, and employer costs of employee benefits. It uses a fixed market basket of labor—similar in concept to the Consumer Price Index's fixed market basket of goods and services—to measure change over time in employer costs of employing labor.

Statistical series on total compensation costs, on wages and salaries, and on benefit costs are available for private nonfarm workers excluding proprietors, the self-employed, and household workers. The total compensation costs and wages and salaries series are also available for State and local government workers and for the civilian nonfarm economy, which consists of private industry and State and local government workers combined. Federal workers are excluded.

The Employment Cost Index probability sample consists of about 4,400 private nonfarm establishments providing about 23,000 occupational observations and 1,000 State and local government establishments providing 6,000 occupational observations selected to represent total employment in each sector. On av-

erage, each reporting unit provides wage and compensation information on five well-specified occupations. Data are collected each quarter for the pay period including the 12th day of March, June, September, and December.

Beginning with June 1986 data, fixed employment weights from the 1980 Census of Population are used each quarter to calculate the civilian and private indexes and the index for State and local governments. (Prior to June 1986, the employment weights are from the 1970 Census of Population.) These fixed weights, also used to derive all of the industry and occupation series indexes, ensure that changes in these indexes reflect only changes in compensation, not employment shifts among industries or occupations with different levels of wages and compensation. For the bargaining status, region, and metropolitan/nonmetropolitan area series, however, employment data by industry and occupation are not available from the census. Instead, the 1980 employment weights are reallocated within these series each quarter based on the current sample. Therefore, these indexes are not strictly comparable to those for the aggregate, industry, and occupation series.

Definitions

Total compensation costs include wages, salaries, and the employer's costs for employee benefits.

Wages and salaries consist of earnings before payroll deductions, including production bonuses, incentive earnings, commissions, and cost-of-living adjustments.

Benefits include the cost to employers for paid leave, supplemental pay (including nonproduction bonuses), insurance, retirement and savings plans, and legally required benefits (such as Social Security, workers' compensation, and unemployment insurance).

Excluded from wages and salaries and employee benefits are such items as payment-in-kind, free room and board, and tips.

Notes on the data

The Employment Cost Index for changes in wages and salaries in the private nonfarm economy was published beginning in 1975. Changes in total compensation cost—wages and salaries and benefits combined—were published beginning in 1980. The series of changes in wages and salaries and for total compensation in the

State and local government sector and in the civilian nonfarm economy (excluding Federal employees) were published beginning in 1981. Historical indexes (June 1981=100) of the quarterly rates of change are presented in the March issue of the BLS periodical, *Compensation and Working Conditions*.

Additional sources of information

For a more detailed discussion of the Employment Cost Index, see the *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992); *Employment Cost Indexes and Levels, 1975-92*, Bulletin 2413 (Bureau of Labor Statistics, 1992); and the following *Monthly Labor Review* articles: "Estimation procedures for the Employment Cost Index," May 1982; and "Introducing new weights for the Employment Cost Index," June 1985.

Data on the ECI are also available in BLS quarterly press releases issued in the month following the reference months of March, June, September, and December; and from the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

Employee Benefits Survey

Description of the series

Employee benefits data are obtained from the Employee Benefits Survey, an annual survey of the incidence and provisions of selected benefits provided by employers. The survey collects data from a sample of approximately 6,000 private sector and State and local government establishments. The data are presented as a percentage of employees who participate in a certain benefit, or as an average benefit provision (for example, the average number of paid holidays provided to employees per year). Selected data from the survey are presented in table 25.

The survey covers paid leave benefits such as lunch and rest periods, holidays and vacations, and personal, funeral, jury duty, military, parental, and sick leave; sickness and accident, long-term disability, and life insurance; medical, dental, and vision care plans; defined benefit and defined contribution plans; flexible benefits plans; reimbursement accounts; and unpaid parental leave.

Also, data are tabulated on the incidence of several other benefits, such as severance pay, child-care assistance, wellness programs, and employee assistance programs.

Definitions

Employer-provided benefits are benefits that are financed either wholly or partly by the employer. They may be sponsored by a union or other third party, as long as there is some employer financing. However, some benefits that are fully paid for by the employee also are included. For example, long-term care insurance and postretirement life insurance paid entirely by the employee are included because the guarantee of insurability and availability at group premium rates are considered a benefit.

Participants are workers who are covered by a benefit, whether or not they use that benefit. If the benefit plan is financed wholly by employers and requires employees to complete a minimum length of service for eligibility, the workers are considered participants whether or not they have met the requirement. If workers are required to contribute towards the cost of a plan, they are considered participants only if they elect the plan and agree to make the required contributions.

Defined benefit pension plans use predetermined formulas to calculate a retirement benefit, and obligate the employer to provide those benefits. Benefits are generally based on salary, years of service, or both.

Defined contribution plans generally specify the level of employer and employee contributions to a plan, but not the formula for determining eventual benefits. Instead, individual accounts are set up for participants, and benefits are based on amounts credited to these accounts.

Tax-deferred savings plans are a type of defined contribution plan that allow participants to contribute a portion of their salary to an employer-sponsored plan and defer income taxes until withdrawal.

Flexible benefit plans allow employees to choose among several benefits, such as life insurance, medical care, and vacation days, and among several levels of care within a given benefit.

Notes on the data

Surveys of employees in medium and large establishments conducted over the 1979-86 period included establishments that employed at least 50, 100, or 250 workers, depending on the industry (most service industries were excluded). The survey conducted in 1987 covered only State and local governments with 50 or more employees. The surveys conducted in 1988 and 1989 included

medium and large establishments with 100 workers or more in private industries. All surveys conducted over the 1979-89 period excluded establishments in Alaska and Hawaii, as well as part-time employees.

Beginning in 1990, surveys of State and local governments and small establishments are conducted in even-numbered years and surveys of medium and large establishments are conducted in odd-numbered years. The small establishment survey includes all private non-farm establishments with fewer than 100 workers, while the State and local government survey includes all governments, regardless of the number of workers. All three surveys include full- and part-time workers, and workers in all 50 States and the District of Columbia.

Additional sources of information

For detailed explanations of the data, See *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992).

The most recent data from the Employee Benefits Survey appear in the following Bureau of Labor Statistics bulletins: *Employee Benefits in Medium and Large Firms*; *Employee Benefits in Small Private Establishments*; and *Employee Benefits in State and Local Governments*. Additionally, articles using data from the Employee Benefits Survey are published periodically in the *Monthly Labor Review*.

Collective bargaining settlements

Description of the series

Collective bargaining settlements data provide statistical measures of negotiated adjustments (increases, decreases, and freezes) in compensation (wage and benefit costs) and wages alone, quarterly for private industry and semiannually for State and local government. Compensation measures cover all collective bargaining situations involving 5,000 workers or more and wage measures cover all situations involving 1,000 workers or more. These data, covering private non-agricultural industries and State and local governments, are calculated using information obtained from bargaining agreements on file with the Bureau, parties to the agreements, and secondary sources, such as newspaper accounts. The data are not seasonally adjusted.

Settlement data are measured in terms of future specified adjustments: those

that will occur within 12 months of the contract effective date—first year—and all adjustments that will occur over the life of the contract expressed as an average annual rate. Adjustments are worker weighted. Both first-year and over-the-life measures exclude wage changes that may occur under cost-of-living clauses that are triggered by future movements in the Consumer Price Index.

Effective wage adjustments measure all adjustments occurring in the reference period, regardless of the settlement date. Included are changes from settlements reached during the period, changes deferred from contracts negotiated in earlier periods, and changes under cost-of-living adjustment clauses. Each wage change is worker weighted. The changes are prorated over all workers under agreements during the reference period yielding the average adjustment.

Definitions

Wage rate changes are calculated by dividing newly negotiated wages by the average straight-time hourly wage rate plus shift premium at the time the agreement is reached.

Compensation changes are calculated by dividing the change in the value of the newly negotiated wage and benefit package by existing average hourly compensation, which includes the cost of previously negotiated benefits, legally required social insurance programs, and average hourly earnings.

Compensation changes are calculated by placing a value on the benefit portion of the settlements at the time they are reached. The cost estimates are based on the assumption that conditions existing at the time of settlement (for example, methods of financing pensions or composition of labor force) will remain constant. The data, therefore, are measures of negotiated changes and not of total changes in employer cost.

Contract duration runs from the effective date of the agreement to the expiration date or first wage reopening date, if applicable. Average annual percent changes over the contract term take account of the compounding of successive changes.

Notes on the data

Comparisons of major collective bargaining settlements for State and local government with those for private industry should note differences in occupational mix, bargaining practices, and settlement characteristics. Professional and

white-collar employees, for example, make up a much larger proportion of the workers covered by government than by private industry settlements. Lump-sum payments and cost-of-living adjustments (COLA) clauses, on the other hand, are rare in government but common in private industry settlements. Also, State and local government bargaining frequently excludes items such as pension benefits and holidays that are prescribed by law, while these items are typical bargaining issues in private industry.

Additional sources of information

For a more detailed discussion on the series, see the *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992). Comprehensive data are published in press releases issued quarterly (in January, April, July, and October) for private industry, and semiannually (in February and August) for State and local government. Historical data and additional detailed tabulations for the prior calendar year appear in the April issue of the BLS periodical, *Compensation and Working Conditions*.

Work stoppages

Description of the series

Data on work stoppages measure the number and duration of major strikes or lockouts (involving 1,000 workers or more) occurring during the month (or year), the number of workers involved, and the amount of time lost because of stoppage.

Data are largely from newspaper accounts and cover only establishments directly involved in a stoppage. They do not measure the indirect or secondary effect of stoppages on other establishments whose employees are idle owing to material shortages or lack of service.

Definitions

Number of stoppages: The number of strikes and lockouts involving 1,000 workers or more and lasting a full shift or longer.

Workers involved: The number of workers directly involved in the stoppage.

Number of days idle: The aggregate number of workdays lost by workers involved in the stoppages.

Days of idleness as a percent of estimated working time: Aggregate work-

days lost as a percent of the aggregate number of standard workdays in the period multiplied by total employment in the period.

Notes on the data

This series is not comparable with the one terminated in 1981 that covered strikes involving six workers or more.

Additional sources of information

Data for each calendar year are reported in a BLS press release issued in the first quarter of the following year. Monthly and historical data appear in the BLS periodical, *Compensation and Working Conditions*. Historical data appear in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

Other compensation data

Other BLS data on pay and benefits, not included in the Current Labor Statistics section of the *Monthly Labor Review*, appear in and consist of the following:

Occupational Compensation Surveys. The Bureau restructured its Area Wage Survey program to provide the data needed under the Federal Employees Comparability Act of 1990 (5 U.S.C. 5304). Implementation of this act requires surveying pay rates for nonfederal employees in various localities across the country.

In place of studies of 90 metropolitan areas (32 areas on an annual basis and two groups of 29 areas in alternate years), the new program is covering approximately 85 publishable areas during the period of September 1991 through May 1993.

Detailed information is provided on salary levels and distributions for the types of private industry and State and local government jobs published in the survey. Although the definitions of the jobs surveyed reflect the duties and responsibilities in private industry and State and local government, they are designed to match specific pay grades of Federal white- and blue-collar employees under the General Schedule pay systems. Accordingly, this survey provides the legally required information for comparing the pay of salaried employees in the Federal civil service with pay in private industry.

Bulletins titled *Occupational Compensation Survey: Pay and Benefits*, or *Occupational Compensation Survey: Pay Only*

are issued throughout the year as the surveys are completed.

Price Data

(Tables 2; 31-43)

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period (1982=100 for many Producer Price Indexes or 1982-84=100 for many Consumer Price Indexes, unless otherwise noted).

Consumer Price Indexes

Description of the series

The **Consumer Price Index (CPI)** is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The CPI is calculated monthly for two population groups, one consisting only of urban households whose primary source of income is derived from the employment of wage earners and clerical workers, and the other consisting of all urban households. The wage earner index (CPI-W) is a continuation of the historic index that was introduced well over a half-century ago for use in wage negotiations. As new uses were developed for the CPI in recent years, the need for a broader and more representative index became apparent. The all-urban consumer index (CPI-U), introduced in 1978, is representative of the 1982-84 buying habits of about 80 percent of the noninstitutional population of the United States at that time, compared with 32 percent represented in the CPI-W. In addition to wage earners and clerical workers, the CPI-U covers professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctors' and dentists' fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items are kept essentially unchanged between major revisions so that only price changes will be measured. All taxes directly associated with the purchase and use of items are included in the index.

Data collected from more than 19,000 retail establishments and 57,000 housing units in 85 urban areas across the country

are used to develop the "U.S. city average." Separate estimates for 15 major urban centers are presented in table 32. The areas listed are as indicated in footnote 1 to the table. The area indexes measure only the average change in prices for each area since the base period, and do not indicate differences in the level of prices among cities.

Notes on the data

In January 1983, the Bureau changed the way in which homeownership costs are measured for the CPI-U. A rental equivalence method replaced the asset-price approach to homeownership costs for that series. In January 1985, the same change was made in the CPI-W. The central purpose of the change was to separate shelter costs from the investment component of homeownership so that the index would reflect only the cost of shelter services provided by owner-occupied homes. An updated CPI-U and CPI-W were introduced with release of the January 1987 data.

Additional sources of information

For a discussion of the general method for computing the CPI, see *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992). The recent change in the measurement of homeownership costs is discussed in Robert Gillingham and Walter Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review*, July 1982, pp. 9-14. An overview of the recently introduced revised CPI, reflecting 1982-84 expenditure patterns, is contained in *The Consumer Price Index: 1987 Revision*, Report 736 (Bureau of Labor Statistics, 1987).

Additional detailed CPI data and regular analyses of consumer price changes are provided in the CPI Detailed Report, a monthly publication of the Bureau. Historical data for the overall CPI and for selected groupings may be found in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

Producer Price Indexes

Description of the series

Producer Price Indexes (PPI) measure average changes in prices received by domestic producers of commodities in all stages of processing. The sample used for calculating these indexes currently contains about 3,100 commodities and about

75,000 quotations per month, selected to represent the movement of prices of all commodities produced in the manufacturing; agriculture, forestry, and fishing; mining; and gas and electricity and public utilities sectors. The stage-of-processing structure of Producer Price Indexes organizes products by class of buyer and degree of fabrication (that is, finished goods, intermediate goods, and crude materials). The traditional commodity structure of PPI organizes products by similarity of end use or material composition. The industry and product structure of PPI organizes data in accordance with the Standard Industrial Classification (SIC) and the product code extension of the SIC developed by the U.S. Bureau of the Census.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

Since January 1987, price changes for the various commodities have been averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1982. The detailed data are aggregated to obtain indexes for stage-of-processing groupings, commodity groupings, durability-of-product groupings, and a number of special composite groups. All Producer Price Index data are subject to revision 4 months after original publication.

Notes on the data

Beginning with the January 1986 issue, the *Review* is no longer presenting tables of Producer Price Indexes for commodity groupings or special composite groups. However, these data will continue to be presented in the Bureau's monthly publication, *Producer Price Indexes*.

The Bureau has completed the first major stage of its comprehensive overhaul of the theory, methods, and procedures used to construct the Producer Price Indexes. Changes include the replacement of judgment sampling with probability sampling techniques; expansion to systematic coverage of the net output of virtually all industries in the mining and manufacturing sectors; a shift

from a commodity to an industry orientation; the exclusion of imports from, and the inclusion of exports in, the survey universe; and the respecification of commodities priced to conform to Bureau of the Census definitions. These and other changes have been phased in gradually since 1978. The result is a system of indexes that is easier to use in conjunction with data on wages, productivity, and employment and other series that are organized in terms of the Standard Industrial Classification and the census product class designations.

Additional sources of information

For a discussion of the methodology for computing Producer Price Indexes, see *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992).

Additional detailed data and analyses of price changes are provided monthly in *Producer Price Indexes*. Selected historical data may be found in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

International Price Indexes

Description of the series

The BLS **International Price Program** produces quarterly export and import price indexes for nonmilitary goods traded between the United States and the rest of the world. The export price index provides a measure of price change for all products sold by U.S. residents to foreign buyers. ("Residents" is defined as in the national income accounts; it includes corporations, businesses, and individuals, but does not require the organizations to be U.S. owned nor the individuals to have U.S. citizenship.) The import price index provides a measure of price change for goods purchased from other countries by U.S. residents. With publication of an all-import index in February 1983 and an all-export index in February 1984, all U.S. merchandise imports and exports now are represented in these indexes. The reference period for the indexes is 1985=100, unless otherwise indicated.

The product universe for both the import and export indexes includes raw materials, agricultural products, semi-finished manufactures, and finished manufactures, including both capital and consumer goods. Price data for these items are collected quarterly by mail questionnaire. In nearly all cases, the data are collected directly from the exporter or importer, although in a few cases, prices are obtained from other sources.

To the extent possible, the data gathered refer to prices at the U.S. border for exports and at either the foreign border or the U.S. border for imports. For nearly all products, the prices refer to transactions completed during the first 2 weeks of the third month of each calendar quarter—March, June, September, and December. Survey respondents are asked to indicate all discounts, allowances, and rebates applicable to the reported prices, so that the price used in the calculation of the indexes is the actual price for which the product was bought or sold.

In addition to general indexes of prices for U.S. exports and imports, indexes are also published for detailed product categories of exports and imports. These categories are defined by the 4- and 5-digit level of detail of the Standard International Trade Classification System (SITC). The calculation of indexes by SITC category facilitates the comparison of U.S. price trends and sector production with similar data for other countries. Detailed indexes are also computed and published on a Standard Industrial Classification (SIC-based) basis, as well as by end-use class.

Notes on the data

The export and import price indexes are weighted indexes of the Laspeyres type. Price relatives are assigned equal importance within each weight category and are then aggregated to the SITC level. The values assigned to each weight category are based on trade value figures compiled by the Bureau of the Census. The trade weights currently used to compute both indexes relate to 1985.

Because a price index depends on the same items being priced from period to period, it is necessary to recognize when a product's specifications or terms of transaction have been modified. For this reason, the Bureau's quarterly questionnaire requests detailed descriptions of the physical and functional characteristics of the products being priced, as well as information on the number of units bought or sold, discounts, credit terms, packaging, class of buyer or seller, and so forth. When there are changes in either the specifications or terms of transaction of a product, the dollar value of each change is deleted from the total price change to obtain the "pure" change. Once this value is determined, a linking procedure is employed which allows for the continued repricing of the item.

For the export price indexes, the preferred pricing basis is f.a.s. (free alongside

ship) U.S. port of exportation. When firms report export prices f.o.b. (free on board), production point information is collected which enables the Bureau to calculate a shipment cost to the port of exportation. An attempt is made to collect two prices for imports. The first is the import price f.o.b. at the foreign port of exportation, which is consistent with the basis for valuation of imports in the national accounts. The second is the import price c.i.f. (costs, insurance, and freight) at the U.S. port of importation, which also includes the other costs associated with bringing the product to the U.S. border. It does not, however, include duty charges. For a given product, only one price basis series is used in the construction of an index.

Beginning in 1988, the Bureau also has been publishing a series of indexes which represent the price of U.S. exports and imports in foreign currency terms.

Additional sources of information

For a discussion of the general method computing International Price Indexes, see *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992).

Additional detailed data and analyses of international price developments are presented in the Bureau's quarterly publication, *U.S. Import and Export Price Indexes* and in occasional *Monthly Labor Review* articles prepared by BLS analysts. Selected historical data may be found in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989). For further information on the foreign currency indexes, see "BLS publishes average exchange rate and foreign currency price indexes," *Monthly Labor Review*, December 1987, pp. 47-49.

Productivity Data

(Tables 2: 44-47)

Business sector and major sectors

Description of the series

The productivity measures relate real physical output to real input. As such, they encompass a family of measures which include single-factor input measures, such as output per unit of labor input (output per hour) or output per unit of capital input, as well as measures of multifactor productivity (output per unit of combined labor and capital inputs).

The Bureau indexes show the change in output relative to changes in the various inputs. The measures cover the business, nonfarm business, manufacturing, and nonfinancial corporate sectors.

Corresponding indexes of hourly compensation, unit labor costs, unit nonlabor payments, and prices are also provided.

Definitions

Output per hour of all persons (labor productivity) is the value of goods and services in constant prices produced per hour of labor input. **Output per unit of capital services** (capital productivity) is the value of goods and services in constant dollars produced per unit of capital services input.

Multifactor productivity is the value of goods and services in constant prices produced per combined unit of labor and capital inputs. Changes in this measure reflect changes in a number of factors which affect the production process, such as changes in technology, shifts in the composition of the labor force, changes in capacity utilization, research and development, skill and effort of the work force, management, and so forth. Changes in the output per hour measures reflect the impact of these factors as well as the substitution of capital for labor.

Compensation per hour is the wages and salaries of employees plus employers' contributions for social insurance and private benefit plans, and the wages, salaries, and supplementary payments for the self-employed (except for nonfinancial corporations in which there are no self-employed)—the sum divided by hours at work. **Real compensation per hour** is compensation per hour deflated by the change in Consumer Price Index for All Urban Consumers.

Unit labor cost are the labor compensation costs expended in the production of a unit of output and are derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from current-dollar value of output and dividing by output. **Unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits.

Unit profits include corporate profits with inventory valuation and capital consumption adjustments per unit of output.

Hours of all persons are the total hours at work of payroll workers, self-employed persons, and unpaid family workers.

Capital services is the flow of services from the capital stock used in production.

It is developed from measures of the net stock of physical assets—equipment, structures, land, and inventories—weighted by rental prices for each type of asset.

Combined units of labor and capital inputs are derived by combining changes in labor and capital input with weights which represent each component's share of total output. The indexes for capital services and combined units of labor and capital are based on changing weights which are averages of the shares in the current and preceding year (the Tornquist index-number formula).

Notes on the data

The output measure for the business sector is equal to constant-dollar gross national product but excludes the rental value of owner-occupied dwellings, the rest-of-world sector, the output of non-profit institutions, the output of paid employees of private households, general government, and the statistical discrepancy. Output of the nonfarm business sector is equal to business sector output less farming. The measures are derived from data supplied by the U.S. Department of Commerce's Bureau of Economic Analysis and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of manufacturing output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are developed from data of the Bureau of Labor Statistics and the Bureau of Economic Analysis.

The productivity and associated cost measures in tables 44–47 describe the relationship between output in real terms and the labor time and capital services involved in its production. They show the changes from period to period in the amount of goods and services produced per unit of input.

Although these measures relate output to hours and capital services, they do not measure the contributions of labor, capital, or any other specific factor of production. Rather, they reflect the joint effect of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the organization of production; managerial skill; and the characteristics and efforts of the work force.

Additional sources of information

Descriptions of methodology underlying the measurement of output per hour and multifactor productivity are found in the *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992). Historical data are provided in *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

Industry productivity measures

Description of the series

The BLS industry productivity data supplement the measures for the business economy and major sectors with annual measures of labor productivity for selected industries at the three- and four-digit levels of the Standard Industrial Classification system. The industry measures differ in methodology and data sources from the productivity measures for the major sectors because the industry measures are developed independently of the National Income and Product Accounts framework used for the major sector measures.

Definitions

Output per employee hour is derived by dividing an index of industry output by an index of aggregate hours of all employees. Output indexes are based on quantifiable units of products or services, or both, combined with fixed-period weights. Whenever possible, physical quantities are used as the unit of measurement for output. If quantity data are not available for a given industry, data on the constant-dollar value of production are used.

The labor input series consist of the hours of all employees (production and nonproduction workers), the hours of all persons (paid employees, partners, proprietors, and unpaid family workers), or the number of employees, depending upon the industry.

Notes on the data

The industry measures are compiled from data produced by the Bureau of Labor Statistics, the Departments of Commerce, Interior, and Agriculture, the Federal Reserve Board, regulatory agen-

cies, trade associations, and other sources.

For most industries, the productivity indexes refer to the output per hour of all employees. For some transportation industries, only indexes of output per employee are prepared. For some trade and service industries, indexes of output per hour of all persons (including self-employed) are constructed.

Additional sources of information

For a listing of available industry productivity indexes and their components, see *Productivity Measures for Selected Industries and Government Services*, Bulletin 2406 (Bureau of Labor Statistics, 1992). For additional information about the methodology for computing the industry productivity measures, see the *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992).

International Comparisons

(Tables 48–50)

Labor force and unemployment

Description of the series

Tables 48 and 49 present comparative measures of the labor force, employment, and unemployment—approximating U.S. concepts—for the United States, Canada, Australia, Japan, and several European countries. The unemployment statistics (and, to a lesser extent, employment statistics) published by other industrial countries are not, in most cases, comparable to U.S. unemployment statistics. Therefore, the Bureau adjusts the figures for selected countries, where necessary, for all known major definitional differences. Although precise comparability may not be achieved, these adjusted figures provide a better basis for international comparisons than the figures regularly published by each country.

Definitions

For the principal U.S. definitions of the labor force, employment, and unemployment, see the Notes section on Employment and Unemployment Data: Household Survey Data.

Notes on the data

The adjusted statistics have been adapted to the age at which compulsory schooling ends in each country, rather than to the U.S. standard of 16 years of age and older. Therefore, the adjusted statistics relate to the population age 16 and older in France, Sweden, and from 1973 onward, the United Kingdom; 15 and older in Canada, Australia, Japan, Germany, the Netherlands, and prior to 1973, the United Kingdom; and 14 and older in Italy. The institutional population is included in the denominator of the labor force participation rates and employment-population ratios for Japan and Germany; it is excluded for the United States and the other countries.

In the U.S. labor force survey, persons on layoff who are awaiting recall to their jobs are classified as unemployed. European and Japanese layoff practices are quite different in nature from those in the United States; therefore, strict application of the U.S. definition has not been made on this point. For further information, see *Monthly Labor Review*, December 1981, pp. 8–11.

The figures for one or more recent years for France, Germany, Italy, the Netherlands, and the United Kingdom are calculated using adjustment factors based on labor force surveys for earlier years and are considered preliminary. The recent-year measures for these countries are, therefore, subject to revision whenever data from more current labor force surveys become available.

There are breaks in the data series for Germany (1983), Italy (1986), the Netherlands (1983), and Sweden (1987). For both Germany and the Netherlands, the breaks reflect the replacement of labor force survey results tabulated by the national statistical offices with those tabulated by the European Community Statistical Office (EUROSTAT). The Dutch figures for 1983 onward also reflect the replacement of man-year employment data with data from the Dutch Survey of Employed Persons. The impact of the changes was to lower the adjusted unemployment rate by 0.3 percentage point for Germany and by about 2 percentage points for the Netherlands.

For Italy, the break in series reflects more accurate enumeration of time of last job search. This resulted in a significant increase in the number of people reported as seeking work in the last 30 days. The impact was to increase the Italian unemployment rates approximating U.S. concepts by about 1 percentage point.

Sweden introduced a new questionnaire. Questions regarding current availability were added and the period of active workseeking was reduced from 60 days to 4 weeks. These changes result in lowering Sweden's unemployment rate by 0.5 percentage point.

Additional sources of information

For further information, see *International Comparisons of Unemployment*, Bulletin 1979 (Bureau of Labor Statistics, 1978), Appendix B, and Supplements to Appendix B. The statistics are also analyzed periodically in the *Monthly Labor Review*. Additional historical data, generally beginning with 1959, are published in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989) and are available in statistical supplements to Bulletin 1979.

Manufacturing productivity and labor costs

Description of the series

Table 50 presents comparative measures of manufacturing labor productivity, hourly compensation costs, and unit labor costs for the United States, Canada, Japan, and nine European countries. These measures are limited to trend comparisons—that is, intercountry series of changes over time—rather than level comparisons because reliable international comparisons of the levels of manufacturing output are unavailable.

Definitions

Output is constant (value added), generally taken from the national accounts of each country. While the national accounting methods for measuring real output differ considerably among the 12 countries, the use of different procedures does not, in itself, connote lack of comparability—rather, it reflects differences among countries in the availability and reliability of underlying data series.

Hours refer to all employed persons including the self-employed in the United States and Canada; to all wage and salary employees in the other countries. The U.S. hours measure is hours paid; the hours measures for the other countries are hours worked.

Compensation (labor cost) includes all payments in cash or kind made directly to employees plus employer expenditures for legally required insurance programs and contractual and private benefit plans.

In addition, for some countries, compensation is adjusted for other significant taxes on payrolls or employment (or reduced to reflect subsidies), even if they are not for the direct benefit of workers, because such taxes are regarded as labor costs. However, compensation does not include all items of labor cost. The costs of recruitment, employee training, and plant facilities and services—such as cafeterias and medical clinics—are not covered because data are not available for most countries. Self-employed workers are included in the U.S. and Canadian compensation figures by assuming that their hourly compensation is equal to the average for wage and salary employees.

Notes on the data

For most of the countries, the measures refer to total manufacturing as defined by the International Standard Industrial Classification. However, the measures for France (beginning 1959), Italy (beginning 1970), and the United Kingdom (beginning 1971) refer to manufacturing and mining less energy-related products, and the figures for the Netherlands exclude petroleum refining from 1969 to 1976. For all countries, manufacturing includes the activities of government enterprises.

The figures for one or more recent years are generally based on current indicators of manufacturing output, employment, hours, and hourly compensation and are considered preliminary until the national accounts and other statistics used for the long-term measures becomes available.

Additional sources of information

For additional information, see *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992), and periodic *Monthly Labor Review* articles. Historical data are provided in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989). The statistics are issued twice per year—in a news release (generally in June) and in a *Monthly Labor Review* article.

Occupational Injury and Illness Data

(Table 50)

Description of the series

The Annual Survey of Occupational Injuries and Illnesses is designed to collect

data on injuries and illnesses based on records which employers in the following industries maintain under the Occupational Safety and Health Act of 1970: agriculture, forestry, and fishing; oil and gas extraction; construction; manufacturing; transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. Excluded from the survey are self-employed individuals, farmers with fewer than 11 employees, employers regulated by other Federal safety and health laws, and Federal, State, and local government agencies.

Because the survey is a Federal-State cooperative program and the data must meet the needs of participating State agencies, an independent sample is selected for each State. The sample is selected to represent all private industries in the States and territories. The sample size for the survey is dependent upon (1) the characteristics for which estimates are needed; (2) the industries for which estimates are desired; (3) the characteristics of the population being sampled; (4) the target reliability of the estimates; and (5) the survey design employed.

While there are many characteristics upon which the sample design could be based, the total recorded case incidence rate is used because it is one of the most important characteristics and the least variable; therefore, it requires the smallest sample size.

The survey is based on stratified random sampling with a Neyman allocation and a ratio estimator. The characteristics used to stratify the establishments are the Standard Industrial Classification (SIC) code and size of employment.

Definitions

Recordable occupational injuries and illnesses are: (1) occupational deaths, regardless of the time between injury and death, or the length of the illness; or (2) nonfatal occupational illnesses; or (3) nonfatal occupational injuries which involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment (other than first aid).

Occupational injury is any injury, such as a cut, fracture, sprain, amputation, and so forth, which results from a work accident or from exposure involv-

ing a single incident in the work environment.

Occupational illness is an abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or disease which may be caused by inhalation, absorption, ingestion, or direct contact.

Lost workday cases are cases which involve days away from work, or days of restricted work activity, or both.

Lost workday cases involving restricted work activity are those cases which result in restricted work activity only.

Lost workdays away from work are the number of workdays (consecutive or not) on which the employee would have worked but could not because of occupational injury or illness.

Lost workdays—restricted work activity are the number of workdays (consecutive or not) on which, because of injury or illness: (1) the employee was assigned to another job on a temporary basis; or (2) the employee worked at a permanent job less than full time; or (3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it.

The number of days away from work or days of restricted work activity does not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.

Incidence rates represent the number of injuries and/or illnesses or lost workdays per 100 full-time workers.

Notes on the data

Estimates are made for industries and employment-size classes and for severity classification: fatalities, lost workday cases, and nonfatal cases without lost workdays. Lost workday cases are separated into those in which the employee would have worked but could not and those in which work activity was restricted. Estimates of the number of cases and the number of days lost are made for both categories.

Most of the estimates are in the form of incidence rates, defined as the number of injuries and illnesses, or lost workdays

per 100 full-time employees. For this purpose, 200,000 employee hours represent 100 employee years (2,000 hours per employee). A few of the available measures are included in the *Handbook of Labor Statistics*. Full detail is presented in the annual bulletin, *Occupational Injuries and Illnesses in the United States, by Industry*.

Comparable data for individual States are available from the BLS Office of Safety, Health, and Working Conditions.

Mining and railroad data are furnished to BLS by the Mine Safety and Health Administration and the Federal Railroad Administration, respectively. Data from these organizations are included in BLS and State publications. Federal employees experience is compiled and published by the Occupational Safety and Health Administration. Data on State and local government employees are collected by about half of the States and territories; these data are not compiled nationally.

Additional sources of information

The Supplementary Data System provides detailed information describing various factors associated with work-related injuries and illnesses. These data are obtained from information reported by employers to State workers' compensation agencies. The Work Injury Report program examines selected types of accidents through an employee survey which focuses on the circumstances surrounding the injury. These data are not included in the *Handbook of Labor Statistics* but are available from the BLS Office of Safety, Health, and Working Conditions.

The definitions of occupational injuries and illnesses and lost workdays are from *Recordkeeping Requirements under the Occupational Safety and Health Act of 1970*. For additional data, see *Occupational Injuries and Illnesses in the United States, by Industry*, annual Bureau of Labor Statistics bulletin; *BLS Handbook of Methods*, Bulletin 2414 (Bureau of Labor Statistics, 1992); *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989), pp. 411-14; annual reports in the *Monthly Labor Review*; and annual U.S. Department of Labor press releases.

1. Labor market indicators

Selected indicators	1991	1992	1991				1992			
			I	II	III	IV	I	II	III	IV
Employment data										
Employment status of the civilian noninstitutionalized population (household survey): ¹										
Labor force participation rate	66.0	66.3	66.1	66.2	65.9	66.0	66.1	66.4	66.4	66.2
Employment-population ratio	61.6	61.4	61.8	61.7	61.5	61.4	61.3	61.4	61.4	61.4
Unemployment rate	6.7	7.4	6.5	6.7	6.7	7.0	7.3	7.5	7.5	7.3
Men	7.0	7.8	6.8	7.1	7.2	7.2	7.7	7.9	7.9	7.6
16 to 24 years	14.3	15.3	13.8	14.4	14.7	14.7	15.4	15.6	15.3	14.7
25 years and over	5.7	6.4	5.4	5.7	5.7	5.9	6.3	6.5	6.5	6.3
Women	6.3	6.9	6.2	6.3	6.2	6.7	6.7	6.9	7.1	6.9
16 to 24 years	12.4	13.0	11.8	12.2	12.3	13.2	12.4	13.0	13.4	12.9
25 years and over	5.1	5.7	5.0	5.1	5.0	5.3	5.6	5.7	5.8	5.8
Unemployment rate, 15 weeks and over	1.9	2.6	1.6	1.8	1.9	2.2	2.5	2.6	2.8	2.8
Employment, nonfarm (payroll data), in thousands: ¹										
Total	108,310	108,437	108,582	108,223	108,250	108,193	108,147	108,432	108,525	108,656
Private sector	89,930	89,858	90,250	89,846	89,868	89,765	89,672	89,890	89,879	89,992
Goods-producing	23,830	23,420	24,071	23,844	23,779	23,634	23,528	23,516	23,372	23,271
Manufacturing	18,455	18,190	18,586	18,445	18,427	18,359	18,284	18,263	18,163	18,059
Service-producing	84,480	85,017	84,511	84,379	84,471	84,559	84,619	84,916	85,153	85,385
Average hours:										
Private sector	34.3	34.4	34.2	34.3	34.3	34.4	34.5	34.4	34.4	34.5
Manufacturing	40.7	41.0	40.4	40.5	40.8	40.9	41.0	41.1	41.0	41.2
Overtime	3.6	3.8	3.4	3.5	3.7	3.7	3.7	4.0	3.7	3.9
Employment Cost Index										
Percent change in the ECI, compensation:										
All workers (excluding farm, household, and Federal workers)	4.3	3.5	1.4	1.0	1.2	.6	1.2	.6	1.1	.6
Private industry workers	4.4	3.5	1.4	1.2	1.1	.6	1.3	.7	.8	.7
Goods-producing ²	4.6	3.8	1.4	1.2	1.1	.8	1.4	.7	.9	.7
Service-producing ²	4.3	3.2	1.4	1.2	1.1	.5	1.1	.7	.7	.7
State and local government workers	3.6	3.7	1.3	.2	1.7	.4	.7	.4	1.9	.6
Workers by bargaining status (private industry):										
Union	4.6	4.3	1.2	1.2	1.2	.9	1.8	.8	1.1	.6
Nonunion	4.3	3.2	1.4	1.2	1.0	.6	1.1	.6	.8	.7

¹ Quarterly data seasonally adjusted.

² Goods-producing industries include mining, construction, and manufacturing. Service-producing industries include all other private sector industries.

2. Annual and quarterly percent changes in compensation, prices, and productivity

Selected measures	1991	1992	1991				1992			
			I	II	III	IV	I	II	III	IV
Compensation data:^{1, 2}										
Employment Cost Index--compensation (wages, salaries, benefits):										
Civilian nonfarm	4.3	3.5	1.4	1.0	1.2	0.6	1.2	0.6	1.1	0.6
Private nonfarm	4.4	3.5	1.4	1.2	1.1	.6	1.3	.7	.8	.7
Employment Cost Index--wages and salaries										
Civilian nonfarm	3.6	2.7	1.1	.8	1.0	.5	.8	.5	.8	.5
Private nonfarm	3.7	2.6	1.1	1.0	.8	.6	.8	.6	.5	.6
Price data:¹										
Consumer Price Index (All urban consumers): All items	3.1	2.9	.9	.7	.9	.5	1.0	.6	.8	.4
Producer Price Index:										
Finished goods	-.1	1.6	-.9	.8	-.4	.4	.2	1.4	-.5	.4
Finished consumer goods	-.9	1.5	-1.5	.9	-.4	.1	.1	1.8	-.3	-.1
Capital equipment	2.5	1.6	1.0	.2	-.2	1.4	.7	.0	-.6	1.6
Intermediate materials, supplies, components	-2.6	1.1	-2.1	.1	.3	-.8	-.1	1.6	.3	-.8
Crude materials	-11.6	2.9	-8.4	-1.4	-1.8	-.3	.2	4.3	.3	-1.9
Productivity data:³										
Output per hour of all persons:										
Business sector .....	.3	2.9	-1.1	1.6	1.9	3.3	3.9	1.0	3.3	4.9
Nonfarm business sector .....	.5	2.8	-.7	1.7	1.9	2.5	3.7	1.7	2.9	4.8
Nonfinancial corporations ⁴	1.8	-	1.5	2.1	2.1	4.2	2.3	2.5	5.1	-

¹ Annual changes are December-to-December change. Quarterly changes are calculated using the last month of each quarter. Compensation and price data are not seasonally adjusted and the price data are not compounded.
² Excludes Federal and private household workers.
³ Annual rates of change are computed by comparing annual averages.

Quarterly percent changes reflect annual rates of change in quarterly indexes. The data are seasonally adjusted.
⁴ Output per hour of all employees.
 - Data not available.

3. Alternative measures of wage and compensation changes

Components	Quarterly average						Four quarters ended--					
	1991		1992				1991		1992			
	III	IV	I	II	III	IV	III	IV	I	II	III	IV
Average hourly compensation:¹												
All persons, business sector	3.9	3.5	4.0	1.9	4.5	4.4	4.6	4.1	4.2	3.3	3.5	3.7
All persons, nonfarm business sector	3.9	3.1	3.8	2.4	4.2	4.3	4.9	4.2	4.1	3.3	3.4	3.7
Employment Cost Index--compensation:												
Civilian nonfarm ²	1.2	.6	1.2	.6	1.1	.6	4.3	4.3	4.0	3.6	3.5	3.5
Private nonfarm	1.1	.6	1.3	.7	.8	.7	4.5	4.4	4.2	3.7	3.4	3.5
Union	1.2	.9	1.8	.8	1.1	.6	4.8	4.6	5.2	4.8	4.6	4.3
Nonunion	1.0	.6	1.1	.6	.8	.7	4.3	4.3	4.0	3.4	3.1	3.2
State and local governments	1.7	.4	.7	.4	1.9	.6	4.1	3.6	3.0	3.3	3.5	3.7
Employment Cost Index--wages and salaries:												
Civilian nonfarm ²	1.0	.5	.8	.5	.8	.5	3.8	3.6	3.2	2.9	2.7	2.7
Private nonfarm .....	.8	.6	.8	.6	.5	.6	3.7	3.7	3.4	3.0	2.7	2.6
Union .....	.8	.8	.8	.9	.8	.5	3.6	3.6	3.4	3.5	3.4	3.1
Nonunion .....	.9	.5	.8	.5	.5	.6	3.7	3.7	3.3	2.9	2.5	2.5
State and local governments	1.7	.4	.5	.4	1.5	.6	3.9	3.5	2.9	3.0	2.7	3.0
Total effective wage adjustments³												
From current settlements .....	.3	.3	.1	.2	.3	.2	1.1	1.1	1.1	.9	.9	.8
From prior settlements .....	.7	.3	.4	.7	.6	.2	1.8	1.9	2.0	2.0	1.9	1.9
From cost-of-living provision .....	.1	.1	.1	.1	.1	.1	.6	.5	.4	.4	.4	.4
Negotiated wage adjustments from settlements:³												
First-year adjustments	3.2	3.7	3.1	2.8	2.9	1.8	3.7	3.6	3.5	3.2	3.1	2.7
Annual rate over life of contract	3.0	3.2	3.1	3.0	3.1	2.6	3.1	3.2	3.2	3.1	3.1	3.0
Negotiated wage and benefit adjustments from settlements:⁴												
First-year adjustment	3.7	3.6	2.7	3.6	3.3	1.4	4.3	4.1	4.0	3.6	3.5	3.0
Annual rate over life of contract	3.2	2.9	3.5	3.6	3.0	2.7	3.3	3.4	3.4	3.2	3.2	3.1

¹ Seasonally adjusted.
² Excludes Federal and household workers.
³ Limited to major collective bargaining units of 1,000 workers or more. The

most recent data are preliminary.
⁴ Limited to major collective bargaining units of 5,000 workers or more. The most recent data are preliminary.

4. Employment status of the population, by sex, age, race and Hispanic origin, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
TOTAL															
Civilian noninstitutional population ¹	189,765	191,576	191,022	191,168	191,307	191,455	191,622	191,790	191,947	192,131	192,316	192,509	192,644	192,786	192,959
Civilian labor force	125,303	126,982	126,548	126,743	127,039	127,298	127,350	127,404	127,274	127,066	127,365	127,591	127,083	127,327	127,429
Participation rate	66.0	66.3	66.2	66.3	66.4	66.5	66.5	66.4	66.3	66.1	66.2	66.3	66.0	66.0	66.0
Employed	116,877	117,598	117,264	117,518	117,580	117,510	117,722	117,780	117,724	117,687	118,064	118,311	118,071	118,451	118,565
Employment-population ratio ²	61.6	61.4	61.4	61.5	61.5	61.4	61.4	61.4	61.3	61.3	61.4	61.5	61.3	61.4	61.4
Unemployed	8,426	9,384	9,284	9,225	9,459	9,788	9,628	9,624	9,550	9,379	9,301	9,280	9,013	8,876	8,864
Unemployment rate	6.7	7.4	7.3	7.3	7.4	7.7	7.6	7.6	7.5	7.4	7.3	7.3	7.1	7.0	7.0
Not in labor force	64,462	64,593	64,474	64,425	64,268	64,157	64,272	64,386	64,673	65,065	64,951	64,918	65,561	65,459	65,530
Men, 20 years and over															
Civilian noninstitutional population ¹	83,806	84,891	84,590	84,671	84,755	84,842	84,944	85,010	85,075	85,159	85,259	85,369	85,445	85,554	85,664
Civilian labor force	64,822	65,638	65,436	65,572	65,844	65,813	65,782	65,857	65,805	65,811	65,740	65,785	65,624	65,734	65,901
Participation rate	77.3	77.3	77.4	77.4	77.7	77.6	77.4	77.5	77.3	77.3	77.1	77.1	76.8	76.8	76.9
Employed	60,714	61,019	60,843	61,033	61,087	61,027	61,070	61,104	61,125	61,088	61,206	61,326	61,423	61,479	61,466
Employment-population ratio ²	72.4	71.9	71.9	72.1	72.1	71.9	71.9	71.9	71.8	71.7	71.8	71.8	71.9	71.9	71.8
Agriculture	2,358	2,355	2,353	2,351	2,366	2,366	2,359	2,363	2,382	2,378	2,326	2,371	2,340	2,299	2,248
Nonagricultural industries	58,356	58,664	58,490	58,682	58,721	58,661	58,711	58,741	58,743	58,710	58,880	58,955	59,083	59,180	59,218
Unemployed	4,109	4,619	4,593	4,539	4,757	4,786	4,712	4,753	4,680	4,723	4,534	4,459	4,201	4,255	4,435
Unemployment rate	6.3	7.0	7.0	6.9	7.2	7.3	7.2	7.2	7.1	7.2	6.9	6.8	6.4	6.5	6.7
Women, 20 years and over															
Civilian noninstitutional population ¹	92,584	93,524	93,256	93,320	93,416	93,479	93,562	93,635	93,703	93,771	93,849	93,960	94,007	94,088	94,148
Civilian labor force	53,563	54,594	54,458	54,534	54,468	54,682	54,834	54,773	54,611	54,578	54,832	55,010	54,733	54,742	54,779
Participation rate	57.9	58.4	58.4	58.4	58.3	58.5	58.6	58.5	58.3	58.2	58.4	58.5	58.2	58.2	58.2
Employed	50,535	51,181	51,114	51,136	51,104	51,233	51,307	51,247	51,141	51,182	51,435	51,494	51,246	51,466	51,668
Employment-population ratio ²	54.6	54.7	54.8	54.8	54.7	54.8	54.8	54.7	54.6	54.6	54.8	54.8	54.5	54.7	54.9
Agriculture	642	627	650	648	619	665	617	619	594	584	616	613	608	551	618
Nonagricultural industries	49,893	50,553	50,464	50,488	50,485	50,568	50,690	50,628	50,547	50,598	50,819	50,881	50,638	50,915	51,050
Unemployed	3,028	3,413	3,344	3,398	3,364	3,449	3,527	3,526	3,470	3,396	3,397	3,516	3,486	3,276	3,111
Unemployment rate	5.7	6.3	6.1	6.2	6.2	6.3	6.4	6.4	6.4	6.2	6.2	6.4	6.4	6.0	5.7
Both sexes, 16 to 19 years															
Civilian noninstitutional population ¹	13,376	13,161	13,176	13,177	13,136	13,134	13,116	13,145	13,169	13,200	13,208	13,181	13,191	13,143	13,147
Civilian labor force	6,918	6,751	6,654	6,637	6,727	6,803	6,734	6,774	6,858	6,677	6,793	6,796	6,726	6,851	6,749
Participation rate	51.7	51.3	50.5	50.4	51.2	51.8	51.3	51.5	52.1	50.6	51.4	51.6	51.0	52.1	51.3
Employed	5,628	5,398	5,307	5,349	5,389	5,250	5,345	5,429	5,458	5,417	5,423	5,491	5,401	5,506	5,431
Employment-population ratio ²	42.1	41.0	40.3	40.6	41.0	40.0	40.8	41.3	41.4	41.0	41.1	41.7	40.9	41.9	41.3
Agriculture	233	225	191	207	201	213	231	236	245	207	267	278	243	266	216
Nonagricultural industries	5,395	5,174	5,116	5,142	5,188	5,037	5,114	5,193	5,213	5,210	5,156	5,213	5,158	5,240	5,215
Unemployed	1,290	1,352	1,347	1,288	1,338	1,553	1,389	1,345	1,400	1,260	1,370	1,305	1,325	1,345	1,318
Unemployment rate	18.6	20.0	20.2	19.4	19.9	22.8	20.6	19.9	20.4	18.9	20.2	19.2	19.7	19.6	19.5
White															
Civilian noninstitutional population ¹	161,511	162,658	162,305	162,398	162,483	162,575	162,682	162,791	162,891	163,013	163,132	163,259	163,343	163,429	163,543
Civilian labor force	107,486	108,526	108,405	108,412	108,551	108,671	108,783	108,707	108,606	108,483	108,723	108,946	108,729	108,754	108,998
Participation rate	66.6	66.7	66.8	66.8	66.8	66.8	66.9	66.8	66.7	66.5	66.6	66.7	66.6	66.5	66.6
Employed	101,039	101,479	101,340	101,479	101,530	101,307	101,558	101,524	101,412	101,458	101,816	102,043	101,987	102,109	102,339
Employment-population ratio ²	62.6	62.4	62.4	62.5	62.5	62.3	62.4	62.4	62.3	62.2	62.4	62.5	62.4	62.5	62.6
Unemployed	6,447	7,047	7,065	6,933	7,021	7,364	7,225	7,183	7,194	7,025	6,907	6,903	6,742	6,645	6,659
Unemployment rate	6.0	6.5	6.5	6.4	6.5	6.8	6.6	6.6	6.6	6.5	6.4	6.3	6.2	6.1	6.1
Black															
Civilian noninstitutional population ¹	21,615	21,958	21,854	21,882	21,909	21,937	21,966	21,997	22,027	22,061	22,096	22,131	22,157	22,184	22,217
Civilian labor force	13,542	13,891	13,729	13,756	13,869	14,001	13,995	14,106	13,981	13,948	13,894	13,935	13,822	14,018	13,834
Participation rate	62.6	63.3	62.8	62.9	63.3	63.8	63.7	64.1	63.5	63.2	62.9	63.0	62.4	63.2	62.3
Employed	11,863	11,933	11,814	11,857	11,858	11,971	11,979	12,098	12,033	11,984	11,948	11,960	11,853	12,186	11,962
Employment-population ratio ²	54.9	54.3	54.1	54.2	54.1	54.6	54.5	55.0	54.6	54.3	54.1	54.0	53.5	54.9	53.8
Unemployed	1,679	1,958	1,915	1,899	2,011	2,030	2,016	2,008	1,948	1,964	1,946	1,975	1,969	1,832	1,871
Unemployment rate	12.4	14.1	13.9	13.8	14.5	14.5	14.4	14.2	13.9	14.1	14.0	14.2	14.2	13.1	13.5

See footnotes at end of table.

4. Continued— Employment status of the population, by sex, age, race and Hispanic origin, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Hispanic origin															
Civilian noninstitutional population ¹	14,770	15,244	15,106	15,145	15,184	15,224	15,263	15,303	15,342	15,382	15,421	15,461	15,500	15,540	15,585
Civilian labor force	9,762	10,131	10,116	10,032	10,092	10,126	10,150	10,116	10,213	10,210	10,211	10,351	10,225	10,280	10,343
Participation rate	66.1	66.5	67.0	66.2	66.5	66.5	66.5	66.1	66.6	66.4	66.2	66.9	66.0	66.1	66.4
Employed	8,799	8,971	8,973	8,987	8,951	8,927	8,955	8,969	9,028	9,011	8,990	9,145	9,043	9,108	9,166
Employment-population ratio ²	59.6	58.9	59.4	59.3	59.0	58.6	58.7	58.6	58.8	58.6	58.3	59.1	58.3	58.6	58.8
Unemployed	963	1,160	1,143	1,045	1,141	1,199	1,195	1,147	1,185	1,199	1,221	1,206	1,182	1,171	1,177
Unemployment rate	9.9	11.4	11.3	10.4	11.3	11.8	11.8	11.3	11.6	11.7	12.0	11.7	11.6	11.4	11.4

¹ The population figures are not seasonally adjusted.

² Civilian employment as a percent of the civilian noninstitutional population.

because data for the "other races" groups are not presented and Hispanics are included in both the white and black population groups.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals

5. Selected employment indicators, monthly data seasonally adjusted

(In thousands)

Selected categories	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
CHARACTERISTIC															
Employed, 16 years and over	116,877	117,598	117,264	117,518	117,580	117,510	117,722	117,780	117,724	117,687	118,064	118,311	118,071	118,451	118,565
Men	63,593	63,805	63,547	63,777	63,830	63,751	63,830	63,901	63,976	63,924	64,043	64,194	64,186	64,338	64,332
Women	53,284	53,793	53,717	53,741	53,750	53,759	53,892	53,879	53,748	53,763	54,021	54,117	53,885	54,114	54,233
Married men, spouse present ..	40,423	40,303	40,163	40,317	40,408	40,345	40,252	40,318	40,292	40,324	40,487	40,639	40,607	40,903	40,902
Married women, spouse present	29,773	30,136	30,096	30,052	30,160	30,303	30,269	30,212	30,108	30,030	30,244	30,403	30,298	30,515	30,669
Women who maintain families ..	6,457	6,582	6,552	6,549	6,565	6,579	6,565	6,641	6,639	6,626	6,585	6,548	6,555	6,615	6,792
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,673	1,696	1,730	1,747	1,682	1,701	1,712	1,698	1,694	1,656	1,685	1,735	1,661	1,614	1,568
Self-employed workers	1,442	1,398	1,371	1,366	1,400	1,396	1,392	1,417	1,397	1,405	1,370	1,397	1,404	1,363	1,377
Unpaid family workers	118	113	96	100	101	128	111	103	108	118	163	106	145	136	130
Nonagricultural industries:															
Wage and salary workers	104,520	105,540	105,154	105,494	105,634	105,365	105,619	105,697	105,643	105,863	105,913	105,978	105,883	106,163	106,447
Government	17,901	18,086	17,817	17,699	17,934	18,184	18,275	18,378	18,505	18,371	18,216	18,065	18,481	18,507	18,536
Private industries	86,619	87,454	87,337	87,795	87,700	87,181	87,344	87,319	87,138	87,492	87,697	87,913	87,402	87,655	87,911
Private households	994	1,116	1,071	1,102	1,085	1,139	1,232	1,116	1,158	1,102	1,109	1,091	1,061	1,071	1,143
Other	85,625	86,338	86,266	86,693	86,615	86,042	86,112	86,203	85,980	86,390	86,588	86,822	86,341	86,584	86,769
Self-employed workers	8,899	8,619	8,663	8,491	8,586	8,595	8,663	8,642	8,662	8,558	8,700	8,668	8,793	9,065	8,832
Unpaid family workers	225	232	240	247	245	253	250	242	217	189	220	221	250	226	206
PERSONS AT WORK PART TIME¹															
All industries:															
Part time for economic reasons ..	6,046	6,385	6,436	6,343	6,486	6,100	6,342	6,352	6,362	6,434	6,493	6,349	6,113	6,461	6,194
Slack work	3,201	3,220	3,216	3,115	3,314	3,289	3,283	3,254	3,171	3,160	3,161	3,206	2,994	3,150	3,039
Could only find part-time work ..	2,534	2,867	2,912	2,865	2,863	2,592	2,740	2,849	2,879	2,988	3,060	2,865	2,887	2,991	2,855
Voluntary part time	15,024	14,759	14,501	14,853	14,589	15,223	14,945	15,082	14,805	14,726	14,834	14,895	14,788	14,698	14,799
Nonagricultural industries:															
Part time for economic reasons ..	5,767	6,116	6,142	6,030	6,181	5,921	6,069	6,099	6,096	6,151	6,230	6,063	5,887	6,242	5,965
Slack work	3,011	3,037	3,005	2,852	3,107	3,138	3,123	3,121	3,001	2,993	2,984	3,024	2,800	2,990	2,887
Could only find part-time work ..	2,455	2,792	2,853	2,782	2,783	2,519	2,659	2,756	2,826	2,905	2,998	2,793	2,849	2,931	2,781
Voluntary part time	14,584	14,329	14,008	14,432	14,135	14,819	14,491	14,721	14,358	14,324	14,413	14,476	14,364	14,282	14,319

¹ Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

6. Selected unemployment indicators, monthly data seasonally adjusted

(Unemployment rates)

Selected categories	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
CHARACTERISTIC															
Total, all workers	6.7	7.4	7.3	7.3	7.4	7.7	7.6	7.6	7.5	7.4	7.3	7.3	7.1	7.0	7.0
Both sexes, 16 to 19 years	18.6	20.0	20.2	19.4	19.9	22.8	20.6	19.9	20.4	18.9	20.2	19.2	19.7	19.6	19.5
Men, 20 years and over	6.3	7.0	7.0	6.9	7.2	7.3	7.2	7.2	7.1	7.2	6.9	6.8	6.4	6.5	6.7
Women, 20 years and over	5.7	6.3	6.1	6.2	6.2	6.3	6.4	6.4	6.4	6.2	6.2	6.4	6.4	6.0	5.7
White, total	6.0	6.5	6.5	6.4	6.5	6.8	6.6	6.6	6.6	6.5	6.4	6.3	6.2	6.1	6.1
Both sexes, 16 to 19 years	16.4	17.1	18.1	16.5	16.7	19.9	17.6	16.9	17.3	15.5	17.1	16.2	16.5	16.8	16.3
Men, 16 to 19 years	17.5	18.4	20.0	17.8	18.4	21.2	18.8	18.5	18.7	15.9	17.7	17.2	18.1	17.9	16.5
Women, 16 to 19 years	15.2	15.7	16.0	15.0	14.9	18.4	16.3	15.2	15.8	15.1	16.4	15.1	14.9	15.6	16.0
Men, 20 years and over	5.7	6.3	6.3	6.2	6.4	6.5	6.4	6.4	6.4	6.3	6.1	6.0	5.8	5.8	6.0
Women, 20 years and over	4.9	5.4	5.4	5.4	5.2	5.5	5.6	5.6	5.6	5.5	5.3	5.6	5.5	5.2	5.0
Black, total	12.4	14.1	13.9	13.8	14.5	14.5	14.4	14.2	13.9	14.1	14.0	14.2	14.2	13.1	13.5
Both sexes, 16 to 19 years	36.3	39.8	37.3	39.5	42.5	41.0	40.5	37.4	42.2	42.2	41.3	39.6	38.7	38.0	43.9
Men, 16 to 19 years	36.5	42.0	38.3	43.2	43.0	45.1	42.3	42.7	44.3	44.2	44.8	42.2	39.0	37.4	45.4
Women, 16 to 19 years	36.1	37.2	36.1	35.7	42.1	36.4	38.4	31.8	39.8	39.8	37.5	36.5	38.5	38.6	42.0
Men, 20 years and over	11.5	13.4	13.8	12.8	13.8	13.6	13.6	13.8	13.5	13.7	13.0	13.3	13.0	11.9	13.1
Women, 20 years and over	10.5	11.7	11.4	11.8	11.9	12.2	12.1	11.9	11.0	11.3	11.8	11.9	12.5	11.2	10.4
Hispanic origin, total	9.9	11.4	11.3	10.4	11.3	11.8	11.8	11.3	11.6	11.7	12.0	11.7	11.6	11.4	11.4
Married men, spouse present	4.4	5.0	4.9	4.8	5.0	5.1	5.2	5.3	5.2	5.1	4.9	4.8	4.5	4.5	4.7
Married women, spouse present	4.5	5.0	4.9	5.0	5.0	5.2	5.2	5.0	5.0	5.1	5.0	5.0	4.9	4.4	4.3
Women who maintain families	9.1	9.9	9.9	10.0	9.9	10.1	10.3	10.3	9.1	9.3	10.4	10.3	10.6	10.2	9.0
Full-time workers	6.5	7.1	7.0	7.0	7.1	7.4	7.3	7.3	7.2	7.1	7.0	6.9	6.7	6.6	6.6
Part-time workers	8.3	9.2	9.0	8.9	9.3	9.3	9.2	9.1	9.5	9.2	9.2	9.7	9.3	9.1	8.9
Unemployed 15 weeks and over	1.9	2.6	2.5	2.4	2.6	2.7	2.8	2.8	2.8	2.8	2.7	2.8	2.6	2.5	2.4
Labor force time lost ¹	7.6	8.3	8.3	8.2	8.3	8.4	8.4	8.4	8.3	8.3	8.3	8.1	7.9	7.9	7.9
INDUSTRY															
Nonagricultural private wage and salary workers	7.0	7.7	7.7	7.6	7.7	7.9	7.8	7.9	7.8	7.8	7.5	7.5	7.3	7.2	7.2
Mining	7.7	7.9	7.7	7.3	8.5	9.0	9.9	10.6	7.2	8.3	5.3	5.5	7.8	7.1	5.5
Construction	15.4	16.7	17.3	16.6	16.9	17.4	17.0	17.0	17.4	16.1	14.5	15.7	14.3	13.7	15.3
Manufacturing	7.2	7.8	7.4	7.6	7.7	8.1	8.2	8.0	8.1	8.2	8.0	7.2	7.3	7.2	7.3
Durable goods	7.5	8.0	7.5	7.6	7.8	8.1	8.4	8.3	8.4	8.9	8.5	7.5	7.3	6.9	7.0
Nondurable goods	6.8	7.5	7.2	7.6	7.6	8.1	8.0	7.4	7.7	7.3	7.3	6.9	7.2	7.5	7.6
Transportation and public utilities	5.3	5.5	5.7	4.7	5.1	5.5	5.7	5.4	5.7	5.8	6.1	5.6	4.9	4.6	4.9
Wholesale and retail trade	7.6	8.4	8.5	8.3	8.4	8.6	8.5	9.0	8.5	8.1	7.9	8.0	7.9	7.8	7.9
Finance and service industries	5.4	6.1	6.1	6.0	6.2	6.1	6.0	6.1	6.0	6.4	6.1	6.5	6.3	6.1	5.7
Government workers	3.2	3.5	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.0	3.8	3.6	3.6	3.6	3.6
Agricultural wage and salary workers	11.6	12.3	10.5	10.9	13.3	12.8	13.8	11.4	14.3	12.5	13.5	12.2	11.6	13.1	12.1

¹ Aggregate hours lost by the unemployed and persons on part time for economic reasons as a percent of potentially available labor force hours.

7. Unemployment rates by sex and age, monthly data seasonally adjusted

(Civilian workers)

Sex and age	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Total, 16 years and over	6.7	7.4	7.3	7.3	7.4	7.7	7.6	7.6	7.5	7.4	7.3	7.3	7.1	7.0	7.0
16 to 24 years	13.4	14.2	14.0	13.8	14.3	15.1	14.5	14.3	14.4	13.6	14.1	13.9	14.0	14.0	13.6
16 to 19 years	18.6	20.0	20.2	19.4	19.9	22.8	20.6	19.9	20.4	18.9	20.2	19.2	19.7	19.6	19.5
16 to 17 years	20.9	23.0	23.2	22.5	23.6	26.4	23.6	21.5	23.8	22.1	23.8	21.8	24.0	21.3	24.3
18 to 19 years	17.2	18.1	18.5	17.4	17.9	20.6	18.7	18.5	18.3	16.8	17.9	17.8	18.2	18.3	16.4
20 to 24 years	10.8	11.3	11.0	11.0	11.6	11.2	11.6	11.5	11.4	11.0	11.1	11.3	11.1	11.2	10.6
25 years and over	5.4	6.1	6.0	6.0	6.1	6.3	6.2	6.2	6.2	6.2	6.0	6.0	5.8	5.6	5.7
25 to 54 years	5.7	6.3	6.3	6.2	6.3	6.5	6.4	6.4	6.4	6.4	6.3	6.3	6.0	5.8	5.9
55 years and over	3.9	4.8	4.4	4.7	4.8	5.2	5.3	5.2	5.0	4.9	4.7	4.6	4.5	4.3	4.2
Men, 16 years and over	7.0	7.8	7.8	7.6	7.9	8.2	7.9	8.0	7.9	7.8	7.6	7.5	7.1	7.2	7.4
16 to 24 years	14.3	15.3	15.6	15.1	15.5	16.1	15.5	15.2	15.1	14.4	15.1	14.7	14.7	14.5	14.4
16 to 19 years	19.8	21.5	22.1	20.9	21.2	24.4	21.9	21.8	21.8	19.5	21.1	20.5	20.9	20.6	20.2
16 to 17 years	21.6	24.4	25.4	23.9	25.5	28.5	24.9	23.7	24.5	22.6	25.1	22.6	26.0	23.0	24.1
18 to 19 years	18.6	19.5	20.2	18.9	19.2	22.1	20.0	20.4	19.9	17.8	18.5	19.3	16.7	18.9	17.7
20 to 24 years	11.7	12.2	12.5	12.2	12.8	12.0	12.4	12.0	11.7	11.9	12.2	11.8	11.8	11.4	11.5
25 years and over	5.7	6.4	6.3	6.3	6.5	6.7	6.5	6.6	6.5	6.6	6.3	6.2	5.8	5.9	6.1
25 to 54 years	5.9	6.6	6.5	6.5	6.7	6.8	6.7	6.8	6.8	6.8	6.5	6.4	6.0	6.1	6.3
55 years and over	4.3	5.2	5.0	5.1	5.2	5.8	5.6	5.5	5.4	5.5	5.0	5.1	4.6	4.5	4.8
Women, 16 years and over	6.3	6.9	6.8	6.9	6.9	7.1	7.1	7.1	7.0	6.9	6.9	7.0	7.0	6.7	6.4
16 to 24 years	12.4	13.0	12.3	12.3	12.9	13.9	13.5	13.2	13.6	12.7	12.9	13.0	13.1	13.4	12.7
16 to 19 years	17.4	18.5	18.2	17.7	18.4	21.0	19.2	17.7	18.8	18.2	19.1	17.7	18.5	18.6	18.8
16 to 17 years	20.1	21.4	20.7	21.0	21.5	24.1	22.2	19.2	23.0	21.6	22.4	21.0	21.7	19.4	24.6
18 to 19 years	15.8	16.5	16.7	15.8	16.6	18.8	17.3	16.3	16.5	15.8	17.2	16.2	15.6	17.6	15.0
20 to 24 years	9.8	10.2	9.4	9.7	10.2	10.3	10.7	10.9	11.1	10.0	9.8	10.6	10.4	10.8	9.7
25 years and over	5.1	5.7	5.7	5.7	5.7	5.8	5.8	5.8	5.8	5.7	5.7	5.8	5.8	5.3	5.1
25 to 54 years	5.4	6.0	6.0	6.0	5.8	6.0	6.0	6.0	6.0	5.9	5.9	6.2	6.0	5.5	5.4
55 years and over	3.4	4.2	3.7	4.0	4.3	4.5	4.9	4.8	4.5	4.3	3.9	3.9	4.3	4.0	3.4

8. Unemployed persons by reason for unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Reason for unemployment	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Job losers	4,608	5,291	5,269	5,219	5,430	5,535	5,462	5,414	5,438	5,492	5,207	5,138	4,847	4,648	4,812
On layoff	1,279	1,246	1,235	1,227	1,211	1,312	1,296	1,255	1,335	1,265	1,195	1,204	1,029	1,049	1,076
Other job losers	3,329	4,045	4,034	3,992	4,219	4,223	4,166	4,159	4,103	4,227	4,012	3,934	3,818	3,599	3,735
Job leavers	979	975	947	1,009	992	1,017	1,003	1,009	963	913	977	972	821	1,046	1,096
Reentrants	2,087	2,228	2,203	2,137	2,194	2,266	2,273	2,246	2,274	2,206	2,194	2,237	2,346	2,299	2,047
New entrants	753	890	832	853	863	999	958	941	944	784	930	930	960	887	930
PERCENT OF UNEMPLOYED															
Job losers	54.7	56.4	57.0	56.6	57.3	56.4	56.3	56.3	56.5	58.5	55.9	55.4	54.0	52.3	54.2
On layoff	15.2	13.3	13.3	13.3	12.8	13.4	13.4	13.1	13.9	13.5	12.8	13.0	11.5	11.8	12.1
Other job losers	39.5	43.1	43.6	43.3	44.5	43.0	43.0	43.3	42.7	45.0	43.1	42.4	42.5	40.5	42.0
Job leavers	11.6	10.4	10.2	10.9	10.5	10.4	10.3	10.5	10.0	9.7	10.5	10.5	9.1	11.8	12.3
Reentrants	24.8	23.7	23.8	23.2	23.1	23.4	23.4	23.6	23.5	23.6	24.1	24.1	26.1	25.9	23.0
New entrants	8.9	9.5	9.0	9.3	9.1	10.2	9.9	9.8	9.8	8.3	10.0	10.0	10.7	10.0	10.5
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.7	4.2	4.2	4.1	4.3	4.3	4.3	4.2	4.3	4.3	4.1	4.0	3.8	3.7	3.8
Job leavers	.8	.8	.7	.8	.8	.8	.8	.8	.8	.7	.8	.8	.6	.8	.9
Reentrants	1.7	1.8	1.7	1.7	1.7	1.8	1.8	1.8	1.7	1.7	1.7	1.8	1.8	1.8	1.6
New entrants	.6	.7	.7	.7	.7	.8	.8	.7	.7	.6	.7	.7	.8	.7	.7

9. Duration of unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Weeks of unemployment	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Less than 5 weeks	3,380	3,270	3,291	3,269	3,362	3,512	3,373	3,289	3,281	3,192	3,120	3,042	3,272	3,232	3,102
5 to 14 weeks	2,724	2,760	2,698	2,706	2,663	2,783	2,776	2,846	2,847	2,666	2,835	2,688	2,481	2,487	2,566
15 weeks and over	2,323	3,354	3,185	3,072	3,349	3,432	3,547	3,547	3,522	3,564	3,446	3,605	3,317	3,143	3,073
15 to 26 weeks	1,225	1,424	1,417	1,303	1,405	1,363	1,459	1,502	1,427	1,475	1,438	1,540	1,407	1,236	1,259
27 weeks and over	1,098	1,930	1,768	1,769	1,944	2,069	2,088	2,045	2,095	2,089	2,008	2,065	1,910	1,907	1,814
Mean duration in weeks	13.8	17.9	17.0	17.2	17.9	18.2	18.3	18.3	18.5	19.2	18.4	19.2	18.7	18.3	17.5
Median duration in weeks	6.9	8.8	8.1	8.6	8.8	8.7	8.6	8.9	9.3	9.3	9.4	9.4	8.5	8.2	8.3

10. Unemployment rates by State, data not seasonally adjusted

State	Feb. 1992	Feb. 1993 ^P	State	Feb. 1992	Feb. 1993 ^P
Alabama	7.8	7.9	Montana	8.3	8.1
Alaska	11.0	9.8	Nebraska	2.9	3.1
Arizona	8.3	7.4	Nevada	7.3	7.2
Arkansas	7.7	7.0	New Hampshire	7.4	8.6
California	9.2	10.3	New Jersey	8.1	8.3
Colorado	6.6	6.5	New Mexico	7.7	6.9
Connecticut	8.2	7.5	New York	9.3	8.5
Delaware	5.4	5.9	North Carolina	6.6	5.7
District of Columbia	8.3	9.0	North Dakota	5.0	5.3
Florida	8.7	7.0	Ohio	8.1	7.8
Georgia	6.6	6.8	Oklahoma	7.3	6.0
Hawaii	3.7	4.8	Oregon	8.4	8.3
Idaho	7.9	7.9	Pennsylvania	8.6	8.2
Illinois	8.9	8.4	Rhode Island	8.3	8.2
Indiana	6.4	6.9	South Carolina	7.5	6.7
Iowa	4.8	5.0	South Dakota	3.4	4.2
Kansas	4.0	4.8	Tennessee	7.6	6.5
Kentucky	8.2	6.4	Texas	7.9	8.1
Louisiana	7.3	7.3	Utah	4.9	4.2
Maine	9.2	9.6	Vermont	7.0	7.3
Maryland	7.5	6.7	Virginia	7.3	5.5
Massachusetts	8.5	8.3	Washington	8.4	8.7
Michigan	9.8	7.5	West Virginia	13.4	11.7
Minnesota	5.3	6.4	Wisconsin	6.3	5.7
Mississippi	8.7	6.7	Wyoming	8.3	6.5
Missouri	6.0	6.7			

^P = preliminary

NOTE: Some data in this table may differ from data published elsewhere because of the continual updating of the database.

11. Employment of workers on nonfarm payrolls by State, data not seasonally adjusted

(In thousands)

State	Feb. 1992	Jan. 1993	Feb. 1993 ^P	State	Feb. 1992	Jan. 1993	Feb. 1993 ^P
Alabama	1,643.6	1,678.0	1,685.9	Nebraska	732.9	736.0	738.4
Alaska	235.1	233.6	238.2	Nevada	622.1	644.9	647.8
Arizona	1,502.6	1,523.0	1,544.7	New Hampshire	471.0	483.4	485.3
Arkansas	941.5	961.4	968.4	New Jersey	3,394.2	3,369.9	3,364.9
California	12,078.1	11,898.3	11,942.4	New Mexico	584.7	590.1	596.5
Colorado	1,558.0	1,592.1	1,604.5	New York	7,622.1	7,568.9	7,599.2
Connecticut	1,508.3	1,486.6	1,486.6	North Carolina	3,058.3	3,148.9	3,160.8
Delaware	329.8	341.2	340.3	North Dakota	268.6	276.6	277.4
District of Columbia	667.4	669.7	673.1	Ohio	4,735.2	4,783.6	4,787.4
Florida	5,308.8	5,386.4	5,441.8	Oklahoma	1,202.6	1,195.8	1,202.6
Georgia	2,911.3	3,006.2	3,011.7	Oregon	1,235.6	1,252.3	1,264.6
Hawaii	543.2	532.7	537.2	Pennsylvania	4,984.1	5,010.3	5,035.7
Idaho	398.8	412.8	416.0	Rhode Island	410.7	417.3	415.7
Illinois	5,110.2	5,136.1	5,148.5	South Carolina	1,496.8	1,528.5	1,534.7
Indiana	2,483.9	2,522.4	2,525.1	South Dakota	297.1	303.4	304.0
Iowa	1,220.4	1,231.7	1,235.3	Tennessee	2,177.6	2,212.6	2,219.7
Kansas	1,093.9	1,108.9	1,119.1	Texas	7,145.8	7,323.8	7,344.2
Kentucky	1,470.2	1,502.1	1,505.5	Utah	748.5	769.3	776.3
Louisiana	1,600.7	1,608.8	1,615.1	Vermont	248.9	248.6	251.9
Maine	490.0	502.0	501.5	Virginia	2,783.6	2,817.4	2,819.2
Maryland	2,037.5	2,034.4	2,038.4	Washington	2,164.3	2,191.9	2,198.5
Massachusetts	2,742.6	2,734.3	2,734.4	West Virginia	620.1	635.0	632.8
Michigan	3,835.2	3,903.0	3,908.6	Wisconsin	2,277.4	2,318.9	2,331.2
Minnesota	2,116.7	2,175.5	2,178.4	Wyoming	195.8	197.1	196.9
Mississippi	940.1	971.9	977.2	Puerto Rico	841.9	845.2	845.9
Missouri	2,276.4	2,282.1	2,304.3	Virgin Islands	44.2	44.8	45.9
Montana	302.9	313.7	314.9				

^P = preliminary

NOTE: Some data in this table may differ from data published elsewhere because of the continual updating of the database.

12. Employment of workers on nonfarm payrolls by industry, monthly data seasonally adjusted

(In thousands)

Industry	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
TOTAL	108,310	108,437	108,200	108,377	108,496	108,423	108,594	108,485	108,497	108,571	108,646	108,752	108,865	109,232	109,210
PRIVATE SECTOR	89,930	89,858	89,693	89,835	89,950	89,885	89,988	89,803	89,847	89,948	89,961	90,067	90,201	90,546	90,536
GOODS-PRODUCING	23,830	23,420	23,532	23,530	23,548	23,470	23,459	23,362	23,296	23,270	23,280	23,263	23,267	23,368	23,303
Mining	691	635	651	646	641	634	633	626	620	623	622	619	616	604	607
Construction	4,685	4,595	4,603	4,605	4,632	4,600	4,584	4,591	4,574	4,601	4,590	4,582	4,559	4,652	4,593
General building contractors	1,152	1,103	1,115	1,108	1,101	1,093	1,096	1,100	1,097	1,098	1,093	1,084	1,086	1,099	1,087
Manufacturing	18,455	18,190	18,278	18,279	18,275	18,236	18,242	18,145	18,102	18,046	18,068	18,062	18,092	18,112	18,103
Production workers	12,467	12,345	12,406	12,412	12,410	12,378	12,392	12,307	12,270	12,235	12,274	12,284	12,342	12,350	12,349
Durable goods	10,602	10,339	10,417	10,409	10,398	10,371	10,347	10,298	10,271	10,231	10,247	10,238	10,265	10,272	10,254
Production workers	6,988	6,859	6,909	6,903	6,896	6,876	6,867	6,828	6,809	6,789	6,819	6,822	6,867	6,867	6,857
Lumber and wood products	679	687	689	688	687	684	683	682	683	689	695	697	696	704	703
Furniture and fixtures	472	465	465	467	467	469	470	465	461	461	461	462	463	466	466
Stone, clay, and glass products	524	519	518	520	522	521	521	520	520	518	518	519	517	525	521
Primary metal industries	726	703	710	708	707	706	702	701	699	695	695	693	694	695	693
Blast furnaces and basic steel products	264	254	258	257	256	255	253	252	252	250	248	245	244	245	244
Fabricated metal products	1,359	1,335	1,342	1,341	1,343	1,338	1,335	1,334	1,330	1,323	1,323	1,323	1,331	1,335	1,335
Industrial machinery and equipment	2,007	1,946	1,948	1,949	1,959	1,954	1,947	1,941	1,943	1,935	1,935	1,933	1,936	1,933	1,933
Electronic and other electrical equipment	1,598	1,549	1,560	1,557	1,554	1,549	1,545	1,536	1,538	1,534	1,537	1,537	1,540	1,544	1,547
Transportation equipment	1,891	1,827	1,863	1,859	1,842	1,836	1,829	1,816	1,797	1,782	1,790	1,788	1,805	1,788	1,773
Motor vehicles and equipment	789	812	814	821	813	814	818	814	803	802	818	823	874	841	835
Instruments and related products	980	943	956	952	949	946	943	938	935	930	927	921	920	918	916
Miscellaneous manufacturing industries	366	366	366	368	368	368	372	365	365	364	366	365	363	364	367
Nondurable goods	7,852	7,851	7,861	7,870	7,877	7,865	7,895	7,847	7,831	7,815	7,821	7,824	7,827	7,840	7,849
Production workers	5,479	5,486	5,497	5,509	5,514	5,502	5,525	5,479	5,461	5,446	5,455	5,462	5,475	5,483	5,492
Food and kindred products	1,672	1,670	1,671	1,677	1,678	1,671	1,685	1,672	1,661	1,661	1,664	1,664	1,671	1,674	1,674
Tobacco products	49	49	49	50	49	49	49	51	50	49	47	49	49	48	48
Textile mill products	672	678	682	682	679	680	682	675	677	672	675	678	676	678	677
Apparel and other textile products	1,010	1,018	1,025	1,023	1,026	1,023	1,034	1,013	1,007	1,004	1,006	1,004	1,004	1,005	1,006
Paper and allied products	688	688	687	689	691	689	689	687	692	688	688	686	685	685	685
Printing and publishing	1,541	1,521	1,519	1,521	1,522	1,520	1,522	1,521	1,523	1,520	1,518	1,520	1,515	1,520	1,520
Chemicals and allied products	1,072	1,071	1,071	1,072	1,073	1,073	1,070	1,072	1,069	1,069	1,069	1,068	1,068	1,066	1,068
Petroleum and coal products	159	155	157	157	156	155	154	153	152	152	152	151	152	152	152
Rubber and misc. plastics products	864	879	877	876	880	883	884	880	877	877	880	883	887	891	897
Leather and leather products	125	123	123	123	123	122	126	123	123	123	122	121	120	121	122
SERVICE-PRODUCING	84,480	85,017	84,668	84,847	84,948	84,953	85,135	85,123	85,201	85,301	85,366	85,489	85,598	85,864	85,907
Transportation and public utilities	5,772	5,742	5,754	5,746	5,745	5,745	5,742	5,729	5,738	5,731	5,732	5,742	5,763	5,765	5,772
Transportation	3,512	3,520	3,524	3,523	3,522	3,524	3,524	3,514	3,520	3,516	3,517	3,531	3,550	3,554	3,562
Communications and public utilities	2,260	2,222	2,230	2,223	2,223	2,221	2,218	2,215	2,218	2,215	2,215	2,211	2,211	2,211	2,210
Wholesale trade	6,069	5,983	5,997	5,993	5,993	5,988	5,972	5,964	5,957	5,969	5,976	5,970	5,995	6,004	6,006
Retail trade	19,259	19,138	19,092	19,177	19,150	19,156	19,184	19,106	19,122	19,146	19,116	19,162	19,227	19,363	19,356
General merchandise stores	2,426	2,309	2,344	2,338	2,334	2,318	2,306	2,296	2,296	2,285	2,262	2,255	2,228	2,270	2,273
Food stores	3,204	3,178	3,179	3,194	3,188	3,192	3,179	3,169	3,176	3,170	3,165	3,168	3,176	3,188	3,192
Automotive dealers and service stations	1,996	2,011	2,004	2,007	2,007	2,011	2,012	2,013	2,012	2,017	2,023	2,034	2,041	2,053	2,059
Eating and drinking places	6,465	6,485	6,431	6,470	6,462	6,473	6,502	6,463	6,494	6,513	6,536	6,579	6,621	6,651	6,662
Finance, insurance, and real estate	6,678	6,672	6,675	6,682	6,681	6,672	6,660	6,661	6,669	6,680	6,669	6,677	6,682	6,680	6,673
Finance	3,211	3,232	3,224	3,230	3,234	3,232	3,228	3,227	3,238	3,244	3,243	3,251	3,264	3,260	3,260
Insurance	2,163	2,139	2,149	2,149	2,144	2,138	2,135	2,133	2,132	2,133	2,129	2,124	2,116	2,115	2,116
Real estate	1,305	1,301	1,302	1,303	1,303	1,302	1,297	1,301	1,299	1,303	1,297	1,302	1,302	1,305	1,297
Services	28,323	28,903	28,643	28,707	28,833	28,854	28,971	28,981	29,065	29,152	29,188	29,253	29,267	29,366	29,426
Business services	5,087	5,290	5,174	5,233	5,278	5,292	5,300	5,319	5,322	5,406	5,427	5,458	5,445	5,478	5,515
Health services	8,177	8,464	8,387	8,412	8,437	8,446	8,478	8,488	8,506	8,535	8,561	8,580	8,589	8,614	8,623
Government	18,380	18,579	18,507	18,542	18,546	18,538	18,606	18,682	18,650	18,623	18,685	18,685	18,664	18,686	18,674
Federal	2,966	2,969	2,989	2,986	2,984	2,972	2,957	2,959	2,967	2,942	2,940	2,971	2,943	2,938	2,916
State	4,346	4,371	4,345	4,360	4,367	4,357	4,388	4,383	4,401	4,390	4,384	4,389	4,394	4,395	4,395
Local	11,067	11,239	11,173	11,196	11,195	11,209	11,261	11,340	11,282	11,291	11,361	11,325	11,327	11,353	11,363

^P = preliminary

NOTE: See notes on the data for a description of the most recent benchmark revision.

13. Average weekly hours of production or nonsupervisory workers on private nonfarm payrolls by industry, monthly data seasonally adjusted

Industry	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
PRIVATE SECTOR	34.3	34.4	34.5	34.3	34.6	34.3	34.3	34.6	34.3	34.5	34.6	34.3	34.5	34.4	34.3
MINING	44.4	44.0	44.3	44.2	44.3	43.4	43.7	44.4	43.8	44.0	44.3	43.7	44.3	43.9	43.5
MANUFACTURING	40.7	41.0	41.1	41.1	41.3	41.0	41.0	41.0	40.9	41.1	41.2	41.2	41.4	41.5	41.2
Overtime hours	3.6	3.8	3.8	3.9	4.1	3.8	3.8	3.7	3.5	3.8	3.9	3.9	4.0	4.3	3.9
Durable goods	41.1	41.5	41.6	41.5	41.9	41.5	41.6	41.6	41.2	41.6	41.8	41.8	42.0	42.2	41.9
Overtime hours	3.5	3.7	3.7	3.8	4.1	3.8	3.8	3.7	3.4	3.8	3.9	3.9	4.1	4.4	4.1
Lumber and wood products	40.0	40.6	41.0	40.6	40.8	40.1	40.8	40.5	40.3	40.7	40.9	40.4	40.5	40.9	40.2
Furniture and fixtures	38.9	39.7	40.1	40.0	40.0	39.8	40.1	39.4	39.2	39.7	40.1	39.9	40.2	40.3	39.9
Stone, clay, and glass products	41.7	42.2	42.0	42.4	42.5	42.3	42.5	42.3	42.5	42.4	42.3	42.1	42.2	42.5	42.3
Primary metal industries	42.2	43.0	43.0	43.2	43.6	43.2	43.1	43.1	42.7	42.8	43.0	43.4	43.7	44.0	43.5
Blast furnaces and basic steel products	42.7	43.5	43.5	44.0	44.1	43.8	43.8	43.9	42.4	42.8	43.1	43.6	44.0	44.6	44.4
Fabricated metal products	41.2	41.6	41.6	41.3	41.9	41.6	41.9	41.6	41.1	41.7	41.8	41.8	42.0	42.2	41.9
Industrial machinery and equipment	41.7	42.2	42.2	42.1	42.6	42.2	42.1	42.2	42.0	42.5	42.8	42.6	42.9	42.9	42.8
Electronic and other electrical equipment	40.7	41.2	41.2	41.0	41.5	41.1	41.3	41.2	41.0	41.3	41.6	41.5	41.7	41.9	41.4
Transportation equipment	41.9	41.8	42.0	41.8	42.2	41.9	41.5	42.2	40.9	41.5	41.8	42.4	42.6	42.9	42.7
Motor vehicles and equipment	42.3	42.4	42.5	43.2	43.1	42.6	42.5	42.9	41.0	41.5	42.3	43.5	43.7	44.5	44.3
Instruments and related products	41.0	41.1	41.2	40.9	41.4	41.2	41.1	41.2	41.0	41.3	41.3	41.1	41.4	40.9	41.3
Miscellaneous manufacturing	39.6	39.9	40.0	39.9	40.0	40.0	40.1	39.7	39.5	40.0	40.0	39.8	39.8	39.9	39.7
Nondurable goods	40.2	40.4	40.5	40.6	40.5	40.4	40.3	40.3	40.5	40.4	40.5	40.5	40.7	40.7	40.3
Overtime hours	3.7	3.8	3.9	4.1	4.1	3.9	3.8	3.8	3.8	3.9	3.9	3.9	3.9	4.2	3.8
Food and kindred products	40.6	40.6	40.7	40.7	40.5	40.3	40.3	40.5	40.8	40.9	40.8	40.6	40.6	40.8	40.5
Textile mill products	40.6	41.1	41.3	41.4	41.4	41.3	41.0	40.8	41.8	40.8	41.1	41.5	41.8	41.9	40.1
Apparel and other textile products	37.0	37.2	37.4	37.2	37.3	37.2	37.2	37.2	37.4	37.4	37.6	37.4	37.6	37.6	37.3
Paper and allied products	43.3	43.6	43.6	44.0	43.8	43.7	43.5	43.5	43.9	43.4	43.4	43.4	43.5	43.7	43.3
Printing and publishing	37.7	38.1	38.1	38.0	38.2	38.1	38.0	38.0	38.1	38.2	38.1	38.0	38.2	38.2	38.1
Chemicals and allied products	42.9	43.1	43.1	43.1	43.4	43.2	43.1	43.1	42.9	42.8	42.9	42.9	43.0	43.0	42.9
Rubber and miscellaneous plastics products	41.1	41.7	41.7	42.3	41.9	41.8	41.6	41.7	41.5	41.5	41.8	41.9	42.2	42.3	41.8
Leather and leather products	37.5	38.0	37.6	38.0	38.2	38.0	38.4	37.9	37.8	38.4	39.2	38.6	39.5	39.7	39.2
TRANSPORTATION AND PUBLIC UTILITIES	38.7	38.8	38.5	38.2	38.8	38.6	38.8	39.3	38.9	38.9	39.5	39.1	39.5	39.4	39.7
WHOLESALE TRADE	38.1	38.2	38.3	38.3	38.3	38.1	38.0	38.5	38.0	38.1	38.5	38.0	38.2	38.1	37.9
RETAIL TRADE	28.6	28.8	28.8	28.6	28.8	28.6	28.5	28.9	28.9	28.9	29.0	28.7	28.8	28.8	28.2
SERVICES	32.4	32.5	32.6	32.4	32.6	32.4	32.4	32.7	32.1	32.5	32.6	32.3	32.4	32.3	32.4

^P = preliminary

NOTE: See "Notes on the data" for a description of the most recent benchmark adjustment.

14. Average hourly earnings of production or nonsupervisory workers on private nonfarm payrolls by industry, seasonally adjusted

Industry	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
PRIVATE SECTOR (in current dollars)	\$10.33	\$10.59	\$10.55	\$10.52	\$10.56	\$10.58	\$10.58	\$10.66	\$10.63	\$10.65	\$10.71	\$10.69	\$10.73	\$10.75	\$10.80
Mining	14.18	14.51	14.50	14.46	14.49	14.52	14.50	14.55	14.54	14.59	14.67	14.46	14.54	14.49	14.61
Construction	13.99	14.11	14.06	14.03	14.09	14.20	14.11	14.21	14.07	14.15	14.20	14.16	14.12	14.14	14.22
Manufacturing	11.18	11.45	11.37	11.42	11.44	11.44	11.45	11.51	11.51	11.51	11.54	11.57	11.60	11.63	11.64
Excluding overtime	10.71	10.94	10.87	10.93	10.92	10.93	10.95	11.00	11.03	10.98	11.02	11.04	11.09	11.08	11.10
Transportation and public utilities	13.24	13.49	13.41	13.43	13.44	13.47	13.43	13.53	13.56	13.56	13.65	13.57	13.58	13.56	13.71
Wholesale trade	11.15	11.40	11.35	11.29	11.37	11.38	11.38	11.51	11.44	11.48	11.53	11.47	11.59	11.59	11.61
Retail trade	6.95	7.14	7.12	7.09	7.12	7.11	7.14	7.16	7.18	7.18	7.19	7.20	7.22	7.24	7.26
Finance, insurance, and real estate	10.40	10.82	10.78	10.68	10.76	10.76	10.76	10.96	10.84	10.92	11.09	11.00	11.10	11.11	11.16
Services	10.22	10.54	10.50	10.46	10.49	10.53	10.53	10.61	10.59	10.61	10.68	10.66	10.73	10.74	10.77
PRIVATE SECTOR (in constant (1982) dollars)	7.45	7.43	7.46	7.41	7.43	7.43	7.41	7.45	7.42	7.40	7.43	7.40	7.40	7.39	-

- Data not available.

^P = preliminary

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

15. Average hourly earnings of production or nonsupervisory workers on private nonfarm payrolls by industry

Industry	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
PRIVATE SECTOR	\$10.33	\$10.59	\$10.54	\$10.54	\$10.55	\$10.53	\$10.53	\$10.56	\$10.66	\$10.69	\$10.73	\$10.71	\$10.78	\$10.78	\$10.81
MINING	14.18	14.51	14.54	14.52	14.45	14.51	14.47	14.45	14.57	14.44	14.58	14.55	14.69	14.58	14.67
CONSTRUCTION	13.99	14.11	14.03	14.02	14.05	14.09	14.05	14.20	14.18	14.25	14.20	14.23	14.16	14.07	14.19
MANUFACTURING	11.18	11.45	11.36	11.41	11.44	11.45	11.46	11.44	11.53	11.49	11.54	11.63	11.61	11.60	11.63
Durable goods	11.75	12.02	11.92	11.95	12.02	12.04	12.03	12.04	12.09	12.07	12.12	12.22	12.19	12.19	12.20
Lumber and wood products	9.24	9.43	9.34	9.35	9.40	9.41	9.46	9.49	9.48	9.52	9.49	9.50	9.45	9.51	9.48
Furniture and fixtures	8.76	9.00	8.89	8.91	8.95	8.99	9.00	9.04	9.09	9.10	9.08	9.18	9.14	9.12	9.09
Stone, clay, and glass products	11.37	11.64	11.49	11.60	11.65	11.66	11.68	11.68	11.83	11.74	11.71	11.68	11.67	11.70	11.73
Primary metal industries	13.34	13.67	13.48	13.64	13.65	13.69	13.77	13.74	13.93	13.73	13.76	13.82	13.76	13.81	13.79
Blast furnaces and basic steel products	15.37	15.89	15.61	15.88	15.77	15.89	15.97	15.97	16.31	15.98	16.03	16.11	15.99	16.23	16.18
Fabricated metal products	11.19	11.41	11.34	11.40	11.43	11.43	11.39	11.41	11.43	11.42	11.47	11.59	11.53	11.53	11.54
Industrial machinery and equipment	12.16	12.43	12.33	12.30	12.38	12.44	12.49	12.45	12.49	12.51	12.57	12.66	12.61	12.61	12.58
Electronic and other electrical equipment	10.71	11.01	10.92	10.98	10.99	11.06	11.05	11.03	11.05	11.04	11.06	11.14	11.14	11.10	11.12
Transportation equipment	14.74	15.16	14.99	14.97	15.17	15.18	15.12	15.21	15.27	15.28	15.36	15.50	15.43	15.46	15.56
Motor vehicles and equipment	15.19	15.33	15.21	15.20	15.48	15.44	15.28	15.37	15.39	15.38	15.40	15.61	15.52	15.55	15.72
Instruments and related products	11.65	11.93	11.84	11.88	11.86	11.90	11.93	11.93	12.03	12.04	12.10	12.16	12.13	12.12	12.16
Miscellaneous manufacturing	8.85	9.14	9.11	9.13	9.10	9.12	9.11	9.08	9.13	9.19	9.23	9.32	9.33	9.32	9.30
Nondurable goods	10.44	10.71	10.63	10.71	10.69	10.69	10.73	10.70	10.82	10.74	10.81	10.87	10.86	10.85	10.88
Food and kindred products	9.90	10.19	10.13	10.20	10.23	10.21	10.18	10.13	10.22	10.12	10.30	10.36	10.30	10.29	10.30
Tobacco products	16.68	16.69	16.76	17.25	17.52	18.13	18.38	16.20	16.02	15.73	17.33	16.00	15.55	16.20	16.85
Textile mill products	8.30	8.60	8.51	8.56	8.58	8.60	8.60	8.62	8.68	8.66	8.70	8.77	8.80	8.82	8.75
Apparel and other textile products	6.77	6.95	6.87	6.98	6.96	6.97	6.94	6.96	7.00	6.98	6.97	7.04	7.05	7.04	7.06
Paper and allied products	12.73	13.09	12.95	13.02	13.05	13.03	13.13	13.07	13.35	13.16	13.20	13.29	13.18	13.20	13.24
Printing and publishing	11.49	11.75	11.68	11.64	11.66	11.67	11.76	11.79	11.93	11.87	11.85	11.89	11.85	11.83	11.90
Chemicals and allied products	14.02	14.45	14.26	14.39	14.39	14.38	14.49	14.47	14.64	14.57	14.64	14.72	14.69	14.68	14.68
Petroleum and coal products	17.03	17.87	17.96	17.92	17.78	17.62	17.70	17.72	17.93	18.05	18.21	18.06	18.34	18.37	18.73
Rubber and miscellaneous plastics products	10.07	10.37	10.27	10.33	10.33	10.36	10.39	10.38	10.46	10.44	10.45	10.54	10.55	10.56	10.52
Leather and leather products	7.18	7.40	7.44	7.47	7.41	7.41	7.28	7.36	7.35	7.36	7.42	7.48	7.46	7.46	7.46
TRANSPORTATION AND PUBLIC UTILITIES	13.24	13.49	13.38	13.43	13.39	13.40	13.43	13.50	13.61	13.59	13.65	13.60	13.61	13.61	13.68
WHOLESALE TRADE	11.15	11.40	11.34	11.34	11.35	11.33	11.38	11.43	11.46	11.46	11.53	11.53	11.61	11.62	11.61
RETAIL TRADE	6.95	7.14	7.11	7.12	7.12	7.10	7.10	7.10	7.21	7.19	7.21	7.19	7.26	7.25	7.27
FINANCE, INSURANCE, AND REAL ESTATE	10.40	10.82	10.80	10.75	10.76	10.70	10.73	10.84	10.84	10.91	11.06	11.04	11.14	11.20	11.20
SERVICES	10.22	10.54	10.53	10.50	10.47	10.42	10.41	10.45	10.61	10.63	10.72	10.75	10.81	10.82	10.81

^P = preliminary

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

16. Average weekly earnings of production or nonsupervisory workers on private nonfarm payrolls by industry

Industry	Annual average		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
PRIVATE SECTOR															
Current dollars	\$354.32	\$364.30	\$361.52	\$360.47	\$362.92	\$364.34	\$364.34	\$369.60	\$365.64	\$368.81	\$371.26	\$369.50	\$366.52	\$368.68	\$368.62
Seasonally adjusted	-	-	363.98	360.84	365.38	362.89	362.89	368.84	364.61	367.43	370.57	366.67	370.19	369.80	370.44
Constant (1982) dollars	255.64	255.47	255.67	254.39	255.58	255.68	255.14	258.10	254.62	255.94	257.28	256.06	253.12	253.91	-
MINING	629.59	638.44	636.85	633.07	634.36	635.54	625.10	643.03	641.08	641.14	651.73	646.02	647.83	637.15	632.28
CONSTRUCTION	533.02	536.18	523.32	535.56	546.55	548.10	546.55	553.80	526.08	555.75	532.50	529.36	511.18	516.37	533.54
MANUFACTURING															
Current dollars	455.03	469.45	464.62	460.96	470.18	471.74	466.42	470.18	472.73	474.54	480.06	487.30	477.17	476.76	475.67
Constant (1982) dollars	328.30	329.21	328.59	325.31	331.11	331.05	326.62	328.34	329.20	329.31	332.68	337.70	329.54	328.35	-
Durable goods	482.93	498.83	493.49	489.95	501.23	503.27	495.64	499.66	496.90	504.53	510.25	520.57	508.32	508.32	508.74
Lumber and wood products	369.60	382.86	379.20	377.74	385.40	383.93	384.08	389.09	382.04	389.37	386.24	387.60	376.11	382.30	379.20
Furniture and fixtures	340.76	357.30	351.16	347.49	354.42	358.70	357.30	360.70	358.15	364.91	364.11	377.30	363.77	360.24	359.06
Stone, clay, and glass products	474.13	491.21	475.69	488.36	497.46	499.05	498.74	501.07	508.69	505.99	498.85	491.73	478.47	484.38	487.97
Primary metal industries	562.95	587.81	575.60	581.06	591.05	595.52	593.49	590.82	601.78	589.02	595.81	605.32	599.94	600.74	595.73
Blast furnaces and basic steel products	656.30	691.22	671.23	687.60	690.73	700.75	702.68	701.08	724.16	687.14	695.70	708.84	701.96	712.50	708.68
Fabricated metal products	461.03	474.66	468.34	465.12	477.77	478.92	470.41	474.66	468.63	479.64	484.03	494.89	480.80	480.80	480.06
Industrial machinery and equipment	507.07	524.55	520.33	511.68	523.67	526.21	520.83	521.66	518.34	531.68	540.51	553.24	540.97	539.71	538.42
Electronic and other electrical equipment	435.90	453.61	448.81	444.69	452.79	456.78	448.63	452.23	450.84	457.06	465.63	475.68	464.54	461.76	459.26
Transportation equipment	617.61	633.69	625.08	615.27	641.69	643.63	621.43	637.30	626.07	641.76	646.66	666.50	649.60	653.96	659.74
Motor vehicles and equipment	642.54	649.99	638.82	629.28	673.38	673.18	640.23	656.30	637.15	655.19	652.96	680.60	662.70	673.32	685.39
Instruments and related products	477.65	490.32	487.81	482.33	486.26	491.47	481.97	487.94	490.82	496.05	504.57	511.94	500.97	496.92	502.21
Miscellaneous manufacturing	350.46	364.69	363.49	359.72	362.18	364.80	358.02	362.29	359.72	372.20	375.66	376.53	367.60	368.14	369.21
Nondurable goods	419.69	432.68	427.33	425.19	430.81	432.95	430.27	434.42	441.46	437.12	442.13	446.76	438.74	436.17	435.20
Food and kindred products	401.94	413.71	405.20	404.94	412.27	411.46	409.24	416.34	424.13	416.94	426.42	427.87	415.09	411.60	410.97
Tobacco products	652.19	644.23	655.32	655.50	669.26	716.14	700.28	633.42	619.97	605.61	656.81	633.60	600.23	602.64	608.29
Textile mill products	336.98	353.46	347.21	343.26	354.35	359.48	350.88	356.87	360.22	356.79	361.05	365.71	363.44	362.50	346.50
Apparel and other textile products	250.49	258.54	255.56	250.58	258.91	261.38	256.78	260.30	256.90	263.15	264.16	266.11	262.97	262.59	261.93
Paper and allied products	551.21	570.72	559.44	561.16	567.68	569.41	568.53	567.24	591.41	575.09	579.48	588.75	573.33	570.24	568.00
Printing and publishing	433.17	447.68	446.18	436.50	439.58	439.96	443.35	451.56	460.50	454.62	456.23	460.14	449.12	449.54	454.58
Chemicals and allied products	601.46	622.80	614.61	620.21	620.21	621.22	618.72	619.32	635.38	622.14	633.91	643.26	631.67	628.30	628.30
Petroleum and coal products	751.02	782.71	788.44	779.52	791.21	768.23	768.18	769.05	785.33	808.64	817.63	792.83	808.79	806.44	848.47
Rubber and miscellaneous plastics products	413.88	432.43	426.21	426.63	432.83	436.16	427.03	431.81	435.14	435.35	438.90	446.90	443.10	443.52	436.58
Leather and leather products	269.25	281.20	276.77	274.90	282.32	287.51	280.28	281.89	277.10	283.36	290.12	292.47	290.94	291.69	288.70
TRANSPORTATION AND PUBLIC UTILITIES	512.39	523.41	511.12	513.03	518.19	521.26	526.46	533.25	532.15	530.01	539.18	533.12	529.43	532.15	537.62
WHOLESALE TRADE	424.82	435.48	433.19	433.19	434.71	432.81	434.72	440.06	436.63	437.77	442.75	440.45	440.02	440.40	438.86
RETAIL TRADE	198.77	205.63	201.92	203.63	204.34	205.90	208.03	210.16	209.09	206.35	206.93	209.95	203.28	204.45	202.11
FINANCE, INSURANCE, AND REAL ESTATE	371.28	387.36	390.96	383.78	383.06	380.92	381.99	393.49	384.82	388.40	400.37	394.13	397.70	399.84	398.72
SERVICES	331.13	342.55	342.23	339.15	339.23	338.65	340.41	344.85	341.64	344.41	349.47	347.23	347.00	349.49	349.16

- Data not available.

^P = preliminary

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

17. Diffusion indexes of employment change, seasonally adjusted

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Private nonfarm payrolls, 356 industries												
Over 1-month span:												
1991	37.9	37.6	36.1	41.3	50.7	45.1	48.7	51.4	50.0	47.1	46.8	46.9
1992	43.5	47.9	47.5	58.4	51.4	45.2	49.6	42.6	49.9	50.1	49.7	53.7
1993	55.1	61.1	48.6	-	-	-	-	-	-	-	-	-
Over 3-month span:												
1991	31.3	28.7	31.7	38.3	41.0	45.6	48.0	51.4	48.5	46.3	44.4	42.7
1992	44.8	44.1	53.2	54.9	54.4	47.6	41.6	44.4	44.1	48.2	51.8	55.2
1993	63.2	58.1	-	-	-	-	-	-	-	-	-	-
Over 6-month span:												
1991	27.9	29.2	28.2	33.0	38.9	44.0	47.2	46.3	46.9	46.1	44.0	43.4
1992	47.8	50.6	49.7	51.1	47.3	49.3	42.8	42.0	46.2	47.6	56.6	56.3
1993	-	-	-	-	-	-	-	-	-	-	-	-
Over 12-month span:												
1991	27.4	28.5	28.1	29.9	32.2	33.4	35.7	39.0	42.8	46.3	47.6	47.8
1992	49.2	44.1	45.2	43.8	44.9	45.6	47.6	54.1	51.4	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-
Manufacturing payrolls, 139 industries												
Over 1-month span:												
1991	35.6	33.5	30.6	40.6	46.0	43.9	49.6	50.7	42.8	46.4	45.3	46.0
1992	39.6	43.9	43.2	57.6	46.4	42.4	51.4	36.7	45.7	39.2	51.1	48.9
1993	52.2	57.6	48.6	-	-	-	-	-	-	-	-	-
Over 3-month span:												
1991	23.4	21.6	21.6	32.4	36.3	43.5	52.2	49.6	46.4	42.4	42.1	37.4
1992	37.8	36.3	48.9	49.3	50.4	46.4	35.6	36.7	31.7	40.6	43.2	52.2
1993	57.6	57.6	-	-	-	-	-	-	-	-	-	-
Over 6-month span:												
1991	17.3	20.5	21.9	25.9	34.9	40.6	45.3	44.6	45.3	39.9	36.0	36.0
1992	41.4	43.2	41.4	47.8	41.7	42.4	29.9	30.9	33.1	35.3	48.6	51.4
1993	-	-	-	-	-	-	-	-	-	-	-	-
Over 12-month span:												
1991	17.6	19.4	18.0	19.4	24.1	25.2	25.9	28.8	37.4	40.6	41.4	38.1
1992	42.8	32.4	34.9	30.6	32.4	33.8	35.3	43.5	43.9	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-

- Data not available.

NOTE: Figures are the percent of industries with employment increasing plus one-half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing

employment. Data for the 2 most recent months shown in each span are preliminary. See the "Definitions" in this section. See "Notes on the data" for a description of the most recent benchmark revision.

18. Annual data: Employment status of the population

(Numbers in thousands)

Employment status	1984	1985	1986	1987	1988	1989	1990	1991	1992
Civilian noninstitutional population	176,383	178,206	180,587	182,753	184,613	186,393	188,049	189,765	191,576
Civilian labor force	113,544	115,461	117,834	119,865	121,669	123,869	124,787	125,303	126,982
Labor force participation rate	64.4	64.8	65.3	65.6	65.9	66.5	66.4	66.0	66.3
Employed	105,005	107,150	109,597	112,440	114,968	117,342	117,914	116,877	117,598
Employment-population ratio	59.5	60.1	60.7	61.5	62.3	63.0	62.7	61.6	61.4
Agriculture	3,321	3,179	3,163	3,208	3,169	3,199	3,186	3,233	3,207
Nonagricultural industries	101,685	103,971	106,434	109,232	111,800	114,142	114,728	113,644	114,391
Unemployed	8,539	8,312	8,237	7,425	6,701	6,528	6,874	8,426	9,384
Unemployment rate	7.5	7.2	7.0	6.2	5.5	5.3	5.5	6.7	7.4
Not in labor force	62,839	62,744	62,752	62,888	62,944	62,523	63,262	64,462	64,593

19. Annual data: Employment levels by industry

(In thousands)

Industry	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total employment	94,496	97,519	99,525	102,200	105,536	108,329	109,782	108,310	106,437
Private sector	78,472	81,125	82,832	85,190	88,150	90,550	91,478	89,930	89,858
Goods-producing	24,727	24,859	24,558	24,708	25,173	25,322	24,960	23,830	23,420
Mining	966	927	777	717	713	693	710	691	635
Construction	4,383	4,673	4,816	4,967	5,110	5,187	5,133	4,685	4,595
Manufacturing	19,378	19,260	18,965	19,024	19,350	19,442	19,117	18,455	18,190
Service-producing	69,769	72,660	74,967	77,492	80,363	83,007	84,822	84,480	85,017
Transportation and public utilities	5,159	5,238	5,255	5,372	5,527	5,644	5,808	5,772	5,742
Wholesale trade	5,574	5,736	5,774	5,865	6,055	6,221	6,200	6,069	5,983
Retail trade	16,526	17,336	17,909	18,462	19,077	19,549	19,677	19,259	19,138
Finance, insurance, and real estate	5,689	5,955	6,283	6,547	6,649	6,695	6,729	6,678	6,672
Services	20,797	21,999	23,053	24,235	25,669	27,120	28,103	28,323	28,903
Government	16,024	16,394	16,693	17,010	17,386	17,779	18,304	18,380	18,579
Federal	2,807	2,875	2,899	2,943	2,971	2,988	3,085	2,966	2,969
State	3,734	3,832	3,893	3,967	4,076	4,182	4,305	4,346	4,371
Local	9,482	9,687	9,901	10,100	10,339	10,609	10,914	11,067	11,239

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

20. Annual data: Average hours and earnings of production or nonsupervisory workers on nonfarm payrolls, by industry

Industry	1984	1985	1986	1987	1988	1989	1990	1991	1992
Private sector:									
Average weekly hours	35.2	34.9	34.8	34.8	34.7	34.6	34.5	34.3	34.4
Average hourly earnings (in dollars)	8.32	8.57	8.76	8.98	9.28	9.66	10.01	10.33	10.59
Average weekly earnings (in dollars)	292.86	299.09	304.85	312.50	322.02	334.24	345.35	354.32	364.30
Mining:									
Average weekly hours	43.3	43.4	42.2	42.4	42.3	43.0	44.1	44.4	44.0
Average hourly earnings (in dollars)	11.63	11.98	12.46	12.54	12.80	13.26	13.68	14.18	14.51
Average weekly earnings (in dollars)	503.58	519.93	525.81	531.70	541.44	570.18	603.29	629.59	638.44
Construction:									
Average weekly hours	37.8	37.7	37.4	37.8	37.9	37.9	38.2	38.1	38.0
Average hourly earnings (in dollars)	12.13	12.32	12.48	12.71	13.08	13.54	13.77	13.99	14.11
Average weekly earnings (in dollars)	458.51	464.46	466.75	480.44	495.73	513.17	526.01	533.02	536.18
Manufacturing:									
Average weekly hours	40.7	40.5	40.7	41.0	41.1	41.0	40.8	40.7	41.0
Average hourly earnings (in dollars)	9.19	9.54	9.73	9.91	10.19	10.48	10.83	11.18	11.45
Average weekly earnings (in dollars)	374.03	386.37	396.01	406.31	418.81	429.68	441.86	455.03	469.45
Transportation and public utilities:									
Average weekly hours	39.4	39.5	39.2	39.2	38.8	38.9	38.9	38.7	38.8
Average hourly earnings (in dollars)	11.12	11.40	11.70	12.03	12.26	12.60	12.97	13.24	13.49
Average weekly earnings (in dollars)	438.13	450.30	458.64	471.58	475.69	490.14	504.53	512.39	523.41
Wholesale trade:									
Average weekly hours	38.5	38.4	38.3	38.1	38.1	38.0	38.1	38.1	38.2
Average hourly earnings (in dollars)	8.88	9.15	9.34	9.59	9.98	10.39	10.79	11.15	11.40
Average weekly earnings (in dollars)	341.78	351.08	357.57	365.38	380.24	394.82	411.10	424.82	435.48
Retail trade:									
Average weekly hours	29.8	29.4	29.2	29.2	29.1	28.9	28.8	28.6	28.8
Average hourly earnings (in dollars)	5.85	5.94	6.03	6.12	6.31	6.53	6.75	6.95	7.14
Average weekly earnings (in dollars)	174.47	174.81	175.80	178.70	183.62	188.72	194.40	198.77	205.63
Finance, insurance, and real estate:									
Average weekly hours	36.5	36.4	36.4	36.3	35.9	35.8	35.8	35.7	35.8
Average hourly earnings (in dollars)	7.63	7.94	8.36	8.73	9.06	9.53	9.97	10.40	10.82
Average weekly earnings (in dollars)	278.04	289.20	304.49	316.90	325.25	341.17	356.93	371.28	387.36
Services:									
Average weekly hours	32.6	32.5	32.5	32.5	32.6	32.6	32.5	32.4	32.5
Average hourly earnings (in dollars)	7.59	7.90	8.18	8.49	8.88	9.38	9.83	10.22	10.54
Average weekly earnings (in dollars)	247.25	256.49	265.93	275.93	289.49	305.79	319.48	331.13	342.55

21. Employment Cost Index, compensation,¹ by occupation and industry group

(June 1989=100)

Series	1990		1991				1992				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended	
											Dec. 1992	
Civilian workers ²	107.6	109.1	110.2	111.5	112.2	113.5	114.2	115.4	116.1	0.6	3.5	
Workers, by occupational group:												
White-collar workers	108.3	109.8	110.8	112.1	112.8	113.9	114.6	115.8	116.6	.7	3.4	
Professional specialty and technical	109.8	111.0	111.7	113.5	114.4	115.4	116.2	118.2	119.1	.8	4.1	
Executive, administrative, and managerial	107.7	109.4	110.6	111.8	112.5	113.0	113.4	114.3	115.0	.6	2.2	
Administrative support, including clerical	107.8	109.2	110.2	111.4	112.2	113.9	114.6	115.9	116.8	.8	4.1	
Blue-collar workers	106.5	108.0	109.2	110.3	111.1	112.6	113.5	114.4	115.2	.7	3.7	
Service occupations	108.0	109.4	110.4	112.3	113.1	114.1	114.7	116.2	116.7	.4	3.2	
Workers, by industry division:												
Goods-producing	107.1	108.6	109.9	111.0	111.9	113.5	114.3	115.3	116.2	.8	3.8	
Manufacturing	107.2	108.6	110.0	111.2	112.2	114.0	114.7	115.7	116.5	.7	3.8	
Service-producing	108.0	109.5	110.4	111.8	112.4	113.5	114.2	115.4	116.2	.7	3.4	
Services	110.2	111.5	112.0	113.8	114.6	115.5	116.3	118.2	119.2	.8	4.0	
Health services	110.9	112.6	113.2	115.0	116.1	117.5	118.4	120.2	121.3	.9	4.5	
Hospitals	110.9	112.2	112.9	114.7	115.9	117.3	118.1	119.8	121.0	1.0	4.4	
Educational services	111.4	112.3	112.4	114.9	115.4	115.7	116.1	118.9	119.7	.7	3.7	
Public administration ³	108.7	110.8	110.9	112.2	112.6	114.0	114.6	115.8	116.3	.4	3.3	
Nonmanufacturing	107.8	109.4	110.3	111.7	112.3	113.3	114.1	115.3	116.0	.6	3.3	
Private industry workers	107.0	108.5	109.8	111.0	111.7	113.1	113.9	114.8	115.6	.7	3.5	
Excluding sales occupations	107.1	108.6	109.8	111.1	112.0	113.3	114.1	115.1	115.9	.7	3.5	
Workers, by occupational group:												
White-collar workers	107.4	109.0	110.3	111.4	112.2	113.4	114.2	115.1	115.9	.7	3.3	
Excluding sales occupations	107.7	109.2	110.4	111.8	112.7	113.8	114.6	115.8	116.6	.7	3.5	
Professional specialty and technical occupations	108.7	110.1	111.1	112.8	113.9	115.3	116.4	118.0	119.0	.8	4.5	
Executive, administrative, and managerial occupations	107.2	108.9	110.3	111.5	112.3	112.7	113.1	113.9	114.5	.5	2.0	
Sales occupations	106.0	108.0	109.8	109.8	109.6	111.6	112.2	111.8	112.6	.7	2.7	
Administrative support occupations, including clerical	107.3	108.6	109.9	111.0	111.9	113.6	114.4	115.5	116.4	.8	4.0	
Blue-collar workers	106.4	107.9	109.0	110.2	111.0	112.5	113.4	114.3	115.0	.6	3.6	
Precision production, craft, and repair occupations	106.2	108.0	109.2	110.5	111.0	112.2	113.1	114.3	115.0	.6	3.6	
Machine operators, assemblers, and inspectors	106.9	108.3	109.4	110.5	111.6	113.9	114.6	115.0	115.8	.7	3.8	
Transportation and material moving occupations	105.5	106.3	107.6	108.3	109.0	110.4	111.4	112.5	113.0	.4	3.7	
Handlers, equipment cleaners, helpers, and laborers	106.7	108.1	109.3	110.4	111.4	112.6	113.4	114.6	115.3	.6	3.5	
Service occupations	107.3	108.3	109.9	111.5	112.4	113.5	114.2	115.4	115.9	.4	3.1	
Production and nonsupervisory occupations ⁴	106.9	108.4	109.6	110.8	111.5	113.0	113.8	114.8	115.5	.6	3.6	
Workers, by industry division:												
Goods-producing	107.0	108.5	109.8	111.0	111.9	113.5	114.3	115.3	116.1	.7	3.8	
Excluding sales occupations	107.0	108.4	109.8	110.9	111.8	113.4	114.1	115.2	115.9	.6	3.7	
White-collar occupations	107.4	108.8	110.1	111.2	112.3	113.6	114.5	115.5	116.7	1.0	3.9	
Excluding sales occupations	107.1	108.5	110.0	111.1	112.2	113.2	113.9	115.1	116.2	1.0	3.6	
Blue-collar occupations	106.9	108.4	109.7	110.8	111.6	113.4	114.1	115.1	115.8	.6	3.8	
Service occupations	106.4	107.9	109.3	110.5	112.1	113.8	115.5	116.9	117.5	.5	4.8	
Construction	105.6	107.4	108.5	109.3	109.9	110.6	111.7	113.1	113.8	.6	3.5	
Manufacturing	107.2	108.6	110.0	111.2	112.2	114.0	114.7	115.7	116.5	.7	3.8	
White-collar occupations	107.4	108.8	110.2	111.3	112.4	113.6	114.6	115.5	116.6	1.0	3.7	
Excluding sales occupations	107.0	108.3	109.9	111.1	112.2	113.0	113.8	115.0	115.9	.8	3.3	
Blue-collar occupations	107.2	108.5	109.8	111.1	112.0	114.2	114.8	115.7	116.4	.6	3.9	
Service occupations	106.3	107.8	109.2	110.3	112.1	113.9	115.4	117.0	117.6	.5	4.9	
Durables	107.2	108.5	109.9	111.2	112.1	114.1	114.8	115.8	116.7	.8	4.1	
Nondurables	107.4	108.8	110.1	111.2	112.3	113.8	114.7	115.4	116.3	.8	3.6	
Service-producing	107.0	108.5	109.8	111.0	111.6	112.8	113.6	114.4	115.2	.7	3.2	
Excluding sales occupations	107.3	108.7	109.9	111.3	112.1	113.2	114.0	115.1	115.9	.7	3.4	
White-collar occupations	107.4	109.1	110.4	111.5	112.1	113.4	114.1	114.9	115.7	.7	3.2	
Excluding sales occupations	108.0	109.5	110.6	112.1	113.0	114.1	114.9	116.1	116.8	.6	3.4	
Blue-collar occupations	105.4	106.6	107.6	108.7	109.4	110.4	111.6	112.4	113.2	.7	3.5	
Service occupations	107.4	108.4	109.9	111.6	112.5	113.4	114.1	115.2	115.7	.4	2.8	
Transportation and public utilities	105.1	106.0	107.7	109.0	109.7	111.1	111.9	112.9	113.5	.5	3.5	
Transportation	104.6	105.2	106.8	107.8	108.6	109.9	110.5	111.7	111.8	.1	2.9	
Public utilities	105.7	107.0	108.8	110.4	111.2	112.6	113.7	114.4	115.6	1.0	4.0	
Communications	105.2	106.0	108.0	109.9	110.7	111.8	112.7	113.4	114.7	1.1	3.6	
Electric, gas, and sanitary services	106.2	108.3	109.8	111.0	111.7	113.7	115.0	115.9	116.7	.7	4.5	
Wholesale and retail trade	106.2	107.4	109.2	110.3	110.7	111.4	112.5	113.0	113.7	.6	2.7	
Excluding sales occupations	106.1	107.7	109.1	110.1	110.8	111.5	112.7	113.5	114.1	.5	3.0	
Wholesale trade	106.5	107.8	109.6	110.7	111.1	112.5	113.5	113.2	114.4	1.1	3.0	
Excluding sales occupations	106.2	108.2	109.6	110.3	111.2	112.5	113.5	114.1	114.9	.7	3.3	
Retail trade	106.0	107.3	109.0	110.1	110.5	110.8	112.1	112.9	113.4	.4	2.6	
Food stores	106.4	107.5	109.3	110.3	111.7	112.6	113.6	114.2	115.1	.8	3.0	
General merchandise stores	106.9	108.3	110.1	111.2	111.1	111.7	112.9	113.3	113.3	.0	2.0	

See footnotes at end of table.

21. Continued—Employment Cost Index, compensation,¹ by occupation and industry group

(June 1989=100)

Series	1990	1991				1992				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended
										Dec. 1992	
Finance, insurance, and real estate	105.5	108.3	109.5	109.7	110.0	111.7	110.8	111.1	111.3	0.2	1.2
Excluding sales occupations	106.7	108.6	109.5	110.6	111.4	112.5	112.2	112.5	113.0	.4	1.4
Banking, savings and loan, and other credit agencies	105.8	107.4	107.0	107.5	107.4	110.2	110.0	111.0	111.4	.4	3.7
Insurance	106.0	107.4	109.5	109.5	110.7	113.2	114.7	114.9	115.2	.3	4.1
Services	109.3	110.8	111.5	113.1	114.0	115.3	116.4	117.8	118.9	.9	4.3
Business services	107.4	110.3	110.4	110.0	111.1	112.5	113.6	115.2	115.9	.6	4.3
Health services	110.8	112.6	113.5	115.3	116.5	117.9	118.9	120.6	121.8	1.0	4.5
Hospitals	110.7	112.2	113.2	114.9	116.1	117.7	118.5	120.2	121.6	1.2	4.7
Educational services	111.4	111.9	111.5	114.9	115.7	115.8	116.3	119.3	120.0	.6	3.7
Colleges and universities	110.6	111.3	112.0	115.5	116.3	116.8	117.4	120.3	120.8	.4	3.9
Nonmanufacturing	106.9	108.5	109.7	110.9	111.5	112.7	113.5	114.4	115.1	.6	3.2
White-collar occupations	107.4	109.1	110.4	111.5	112.1	113.4	114.1	114.9	115.7	.7	3.2
Excluding sales occupations	108.0	109.5	110.6	112.1	112.9	114.1	114.9	116.0	116.9	.8	3.5
Blue-collar occupations	105.6	107.2	108.2	109.2	109.8	110.7	111.8	112.8	113.4	.5	3.3
Service occupations	107.4	108.4	109.9	111.7	112.5	113.4	114.1	115.2	115.7	.4	2.8
State and local government workers	110.4	111.8	112.0	113.9	114.4	115.2	115.7	117.9	118.6	.6	3.7
Workers, by occupational group:											
White-collar workers	110.9	112.2	112.3	114.2	114.6	115.4	115.8	118.1	118.9	.7	3.8
Professional specialty and technical	111.2	112.3	112.4	114.5	115.0	115.5	116.0	118.5	119.2	.6	3.7
Executive, administrative, and managerial	110.1	112.2	112.0	113.3	113.7	115.0	115.2	116.8	117.8	.9	3.6
Administrative support, including clerical	110.2	111.8	111.7	113.5	114.0	115.4	115.7	117.5	118.5	.9	3.9
Blue-collar workers	108.7	110.4	110.9	112.4	112.9	114.2	115.3	116.9	117.8	.8	4.3
Workers, by industry division:											
Services	111.3	112.4	112.6	114.8	115.3	115.8	116.2	118.8	119.6	.7	3.7
Services excluding schools ⁵	110.2	112.2	111.7	113.7	114.4	115.1	115.6	117.5	118.6	.9	3.7
Health services	111.1	112.6	112.2	113.9	114.9	115.9	116.8	118.6	119.4	.7	3.9
Hospitals	111.4	112.2	112.1	114.1	115.2	115.9	116.7	118.6	119.4	.7	3.6
Educational services	111.4	112.4	112.6	114.9	115.3	115.7	116.1	118.9	119.7	.7	3.8
Schools	111.6	112.5	112.9	115.2	115.6	116.0	116.4	119.2	119.9	.6	3.7
Elementary and secondary	112.1	112.9	113.0	115.7	116.2	116.6	117.1	119.9	120.7	.7	3.9
Colleges and universities	110.2	111.3	112.5	113.4	113.5	114.0	114.1	116.9	117.2	.3	3.3
Public administration ³	108.7	110.8	110.9	112.2	112.6	114.0	114.6	115.8	116.3	.4	3.3

¹ Cost (cents per hour worked) measured in the Employment Cost Index consists of wages, salaries, and employer cost of employee benefits.

² Consist of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

³ Consist of legislative, judicial, administrative, and regulatory activities.

⁴ This series has the same industry and occupational coverage as the Hourly Earnings Index, which was discontinued in January 1989.

⁵ Includes, for example, library, social, and health services.

22. Employment Cost Index, wages and salaries, by occupation and industry group

(June 1989=100)

Series	1990		1991				1992				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended	
										Dec. 1992		
Civilian workers ¹	106.8	108.0	108.9	110.0	110.6	111.5	112.1	113.0	113.6	0.5	2.7	
Workers, by occupational group:												
White-collar workers	107.4	108.7	109.6	110.8	111.3	112.2	112.8	113.7	114.5	.7	2.9	
Professional specialty and technical	108.8	109.9	110.4	112.3	113.0	113.6	114.4	116.0	116.7	.6	3.3	
Executive, administrative, and managerial	107.2	108.5	109.6	110.8	111.5	111.9	112.2	112.8	113.5	.6	1.8	
Administrative support, including clerical	106.7	107.9	108.8	109.9	110.6	111.8	112.5	113.4	114.2	.7	3.3	
Blue-collar workers	105.4	106.6	107.4	108.2	108.9	109.8	110.6	111.3	111.9	.5	2.8	
Service occupations	106.8	107.8	108.9	110.6	111.3	111.9	112.4	113.4	113.8	.4	2.2	
Workers, by industry division:												
Goods-producing	105.8	107.0	108.0	108.8	109.7	110.7	111.4	112.2	112.9	.6	2.9	
Manufacturing	106.2	107.4	108.4	109.3	110.3	111.5	112.2	112.9	113.7	.7	3.1	
Service-producing	107.2	108.4	109.3	110.6	111.0	111.8	112.4	113.3	114.0	.6	2.7	
Services	109.2	110.2	110.7	112.4	113.0	113.7	114.3	115.9	116.7	.7	3.3	
Health services	109.7	111.1	111.8	113.4	114.5	115.4	116.2	117.7	118.6	.8	3.6	
Hospitals	109.8	110.8	111.5	113.1	114.3	115.2	115.7	117.1	118.0	.8	3.2	
Educational services	110.4	111.1	111.1	113.6	114.0	114.1	114.4	116.9	117.5	.5	3.1	
Public administration ²	107.3	109.1	109.5	110.6	110.9	111.9	112.4	113.1	113.6	.4	2.4	
Nonmanufacturing	106.9	108.1	109.0	110.2	110.7	111.5	112.0	113.0	113.6	.5	2.6	
Private industry workers	106.1	107.3	108.4	109.3	110.0	110.9	111.6	112.2	112.9	.6	2.6	
Excluding sales occupations	106.2	107.4	108.4	109.4	110.2	111.1	111.8	112.5	113.2	.6	2.7	
Workers, by occupational group:												
White-collar workers	106.6	107.9	109.1	110.1	110.7	111.7	112.3	112.9	113.7	.7	2.7	
Excluding sales occupations	106.9	108.2	109.2	110.5	111.3	112.1	112.8	113.7	114.4	.6	2.8	
Professional specialty and technical occupations	107.5	108.6	109.5	111.1	112.0	113.0	114.0	115.3	116.0	.6	3.6	
Executive, administrative, and managerial occupations	106.9	108.2	109.4	110.6	111.4	111.6	112.0	112.5	113.2	.6	1.6	
Sales occupations	105.2	106.8	108.5	108.2	107.9	109.7	110.1	109.7	110.7	.9	2.6	
Administrative support occupations, including clerical	106.4	107.6	108.6	109.6	110.4	111.6	112.4	113.2	114.0	.7	3.3	
Blue-collar workers	105.2	106.4	107.3	108.0	108.8	109.7	110.4	111.1	111.6	.5	2.6	
Precision production, craft, and repair occupations	104.9	106.3	107.0	107.8	108.4	109.3	110.1	111.0	111.5	.5	2.9	
Machine operators, assemblers, and inspectors	105.8	107.1	108.0	108.7	109.8	110.9	111.6	111.7	112.4	.6	2.4	
Transportation and material moving occupations	104.1	104.5	105.6	106.1	106.7	107.4	108.3	109.3	109.7	.4	2.8	
Handlers, equipment cleaners, helpers, and laborers	106.2	107.3	108.5	109.2	109.9	110.6	111.3	112.1	112.6	.4	2.5	
Service occupations	106.4	106.9	108.3	109.8	110.6	111.2	111.6	112.5	112.9	.4	2.1	
Production and nonsupervisory occupations ³	105.9	107.0	108.1	109.0	109.6	110.6	111.3	112.0	112.6	.5	2.7	
Workers, by industry division:												
Goods-producing	105.8	107.0	108.0	108.7	109.7	110.7	111.4	112.1	112.8	.6	2.8	
Excluding sales occupations	105.7	106.9	107.9	108.7	109.7	110.5	111.2	112.0	112.6	.5	2.6	
White-collar occupations	106.3	107.4	108.5	109.5	110.4	111.7	112.5	113.2	114.2	.9	3.4	
Excluding sales occupations	106.2	107.2	108.5	109.5	110.5	111.3	112.0	112.9	113.7	.7	2.9	
Blue-collar occupations	105.5	106.8	107.6	108.3	109.2	110.1	110.7	111.4	111.9	.4	2.5	
Service occupations	105.0	106.0	106.7	107.8	109.4	110.1	111.0	112.2	113.1	.8	3.4	
Construction	103.7	105.1	105.9	106.3	106.8	107.2	107.9	108.7	108.9	.2	2.0	
Manufacturing	106.2	107.4	108.4	109.3	110.3	111.5	112.2	112.9	113.7	.7	3.1	
White-collar occupations	106.4	107.6	108.8	109.8	110.7	111.9	112.9	113.6	114.6	.9	3.5	
Excluding sales occupations	106.2	107.2	108.6	109.7	110.7	111.4	112.2	113.0	114.0	.9	3.0	
Blue-collar occupations	106.1	107.3	108.2	109.0	110.0	111.1	111.7	112.4	113.1	.6	2.8	
Service occupations	104.9	105.8	106.5	107.7	109.3	110.1	111.0	112.3	113.4	1.0	3.8	
Durables	106.1	107.3	108.3	109.2	110.2	111.2	111.8	112.7	113.4	.6	2.9	
Nondurables	106.3	107.6	108.6	109.4	110.6	111.8	112.8	113.2	114.3	1.0	3.3	
Service-producing	106.3	107.5	108.7	109.7	110.2	111.1	111.7	112.3	113.0	.6	2.5	
Excluding sales occupations	106.6	107.7	108.7	110.0	110.7	111.5	112.2	113.0	113.7	.6	2.7	
White-collar occupations	106.8	108.1	109.3	110.3	110.7	111.7	112.2	112.8	113.6	.7	2.6	
Excluding sales occupations	107.2	108.5	109.5	110.9	111.6	112.4	113.1	114.0	114.7	.6	2.8	
Blue-collar occupations	104.7	105.6	106.5	107.3	107.8	108.7	109.7	110.3	111.0	.6	3.0	
Service occupations	106.5	107.0	108.4	110.0	110.7	111.3	111.7	112.6	112.9	.3	2.0	
Transportation and public utilities	104.6	105.4	106.6	107.7	108.4	109.7	110.6	111.2	111.8	.5	3.1	
Transportation	103.5	104.3	105.5	106.6	107.0	108.3	109.2	109.8	109.9	.1	2.7	
Public utilities	106.0	106.9	108.0	109.0	110.0	111.4	112.4	113.0	114.1	1.0	3.7	
Communications	106.1	106.5	107.6	108.5	109.6	110.8	111.7	112.2	113.5	1.2	3.6	
Electric, gas, and sanitary services	105.7	107.3	108.6	109.5	110.5	112.2	113.3	114.2	114.8	.5	3.9	

See footnotes at end of table.

22. Continued— Employment Cost Index, wages and salaries, by occupation and industry group

(June 1989 = 100)

Series	1990	1991				1992				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended
										Dec. 1992	
Wholesale and retail trade	105.6	106.6	108.4	109.4	109.6	109.9	111.2	111.5	112.3	0.7	2.5
Excluding sales occupations	105.5	106.8	108.3	109.2	109.6	110.1	111.4	112.1	112.6	.4	2.7
Wholesale trade	106.2	107.3	109.2	110.4	110.3	111.4	112.5	111.9	113.5	1.4	2.9
Excluding sales occupations	105.9	107.9	109.2	109.8	110.5	111.5	112.7	113.3	114.1	.7	3.3
Retail trade	105.3	106.2	108.0	109.0	109.2	109.3	110.6	111.3	111.8	.4	2.4
Food stores	105.8	106.9	108.7	109.4	110.4	110.9	112.3	112.9	113.7	.7	3.0
General merchandise stores	106.5	107.8	110.0	110.9	110.6	111.1	111.7	111.7	111.8	.1	1.1
Finance, insurance, and real estate	104.8	107.0	108.1	108.0	108.4	109.5	108.2	108.2	108.3	.1	-.1
Excluding sales occupations	106.1	107.6	108.4	109.5	110.4	110.6	109.9	109.9	110.2	.3	-.2
Banking, savings and loan, and other credit agencies	105.4	106.6	105.9	106.4	106.3	108.2	107.7	108.6	109.0	.4	2.5
Insurance	105.1	105.7	107.8	107.5	108.6	111.2	112.7	112.7	112.7	.0	3.8
Services	108.3	109.5	110.0	111.5	112.2	113.2	114.0	115.2	116.1	.8	3.5
Business services	107.4	109.6	109.5	108.9	110.0	111.0	111.7	113.3	113.9	.5	3.5
Health services	109.7	111.1	111.9	113.5	114.6	115.6	116.3	117.9	118.9	.8	3.8
Hospitals	109.8	110.8	111.6	113.2	114.4	115.4	115.9	117.3	118.3	.9	3.4
Educational services	110.2	110.3	109.7	113.0	113.7	113.4	113.6	116.5	117.1	.5	3.0
Colleges and universities	109.3	109.6	110.2	113.7	114.2	114.2	114.5	117.3	117.6	.3	3.0
Nonmanufacturing	106.1	107.3	108.4	109.3	109.8	110.7	111.3	111.9	112.6	.6	2.6
White-collar occupations	106.7	108.0	109.2	110.2	110.6	111.6	112.1	112.8	113.5	.6	2.6
Excluding sales occupations	107.2	108.5	109.4	110.7	111.5	112.3	113.0	113.9	114.6	.6	2.8
Blue-collar occupations	104.3	105.5	106.3	107.1	107.5	108.2	109.1	109.7	110.2	.5	2.5
Service occupations	106.5	107.1	108.4	110.0	110.7	111.3	111.7	112.6	112.9	.3	2.0
State and local government workers	109.4	110.6	110.9	112.8	113.2	113.8	114.2	115.9	116.6	.6	3.0
Workers, by occupational group:											
White-collar workers	109.9	111.0	111.2	113.1	113.5	114.0	114.3	116.2	116.9	.6	3.0
Professional specialty and technical	110.6	111.5	111.7	113.8	114.2	114.5	114.8	117.0	117.6	.5	3.0
Executive, administrative, and managerial	108.9	110.6	110.7	112.0	112.3	113.3	113.5	114.7	115.5	.7	2.8
Administrative support, including clerical	107.9	109.4	109.7	111.4	111.8	112.7	112.9	114.1	114.9	.7	2.8
Blue-collar workers	107.7	109.1	110.0	111.1	111.6	112.5	113.7	115.0	115.6	.5	3.6
Workers, by industry division:											
Services	110.3	111.3	111.5	113.7	114.1	114.4	114.7	116.9	117.5	.5	3.0
Services excluding schools ⁴	109.6	111.4	111.4	113.5	114.2	114.8	115.2	116.4	117.4	.9	2.8
Health services	109.7	111.1	111.7	113.0	114.0	114.9	115.7	116.7	117.4	.6	3.0
Hospitals	109.8	110.7	111.3	112.9	114.1	114.5	115.2	116.5	117.1	.5	2.6
Educational services	110.5	111.3	111.5	113.8	114.1	114.3	114.6	116.9	117.6	.6	3.1
Schools	110.5	111.2	111.5	113.7	114.0	114.3	114.6	117.0	117.5	.4	3.1
Elementary and secondary	110.9	111.6	111.7	114.3	114.7	114.9	115.3	117.9	118.5	.5	3.3
Colleges and universities	109.2	110.2	111.0	112.0	112.0	112.3	112.3	114.1	114.3	.2	2.1
Public administration ²	107.3	109.1	109.5	110.6	110.9	111.9	112.4	113.1	113.6	.4	2.4

¹ Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

² Consists of legislative, judicial, administrative, and regulatory activities.

³ This series has the same industry and occupational coverage as the Hourly Earnings Index, which was discontinued in January 1989.

⁴ Includes, for example, library, social and health services.

23. Employment Cost Index, benefits, private industry workers by occupation and industry group

(June 1989 = 100)

Series	1990	1991				1992				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended
										Dec. 1992	
Private industry workers	109.4	111.6	113.5	115.2	116.2	118.6	119.7	121.2	122.2	0.8	5.2
Workers, by occupational group:											
White-collar workers	109.7	112.1	113.8	115.3	116.4	118.4	119.4	121.0	122.0	.8	4.8
Blue-collar workers	109.0	111.0	112.8	114.9	115.7	118.7	119.7	121.2	122.2	.8	5.6
Workers, by industry group:											
Goods-producing	109.9	111.9	113.9	115.8	116.7	119.7	120.6	122.3	123.4	.9	5.7
Service-producing	109.0	111.4	113.0	114.6	115.7	117.7	118.8	120.4	121.2	.7	4.8
Manufacturing	109.5	111.2	113.3	115.3	116.1	119.3	120.1	121.5	122.6	.9	5.6
Nonmanufacturing	109.3	111.9	113.5	115.1	116.2	118.2	119.4	121.0	122.0	.8	5.0

24. Employment Cost Index, private nonfarm workers, by bargaining status, region, and area size

(June 1989=100)

Series	1990		1991			1992				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended
	Dec. 1992										
COMPENSATION											
Workers, by bargaining status¹											
Union	106.2	107.5	108.8	110.1	111.1	113.1	114.0	115.2	115.9	0.6	4.3
Goods-producing	106.3	107.9	109.2	110.3	111.3	114.0	114.6	115.7	116.4	.6	4.6
Service-producing	106.0	107.1	108.3	109.8	110.9	111.9	113.2	114.6	115.2	.5	3.9
Manufacturing	106.6	108.1	109.5	110.6	111.7	114.8	115.2	116.1	116.9	.7	4.7
Nonmanufacturing	105.9	107.1	108.3	109.7	110.6	111.8	113.1	114.5	115.1	.5	4.1
Nonunion	107.3	108.8	110.1	111.2	111.9	113.1	113.8	114.7	115.5	.7	3.2
Goods-producing	107.4	108.8	110.1	111.3	112.2	113.3	114.1	115.1	116.0	.8	3.4
Service-producing	107.2	108.8	110.1	111.2	111.8	113.0	113.7	114.4	115.2	.7	3.0
Manufacturing	107.6	108.8	110.2	111.5	112.4	113.6	114.5	115.5	116.4	.8	3.6
Nonmanufacturing	107.2	108.8	110.1	111.2	111.7	112.9	113.5	114.3	115.1	.7	3.0
Workers, by region¹											
Northeast	107.6	109.4	110.6	111.7	112.5	113.9	114.5	115.5	116.4	.8	3.5
South	106.9	108.4	109.8	110.7	111.2	112.5	113.3	114.1	114.8	.6	3.2
Midwest (formerly North Central)	107.1	108.5	109.7	111.2	112.2	113.8	114.6	115.3	116.1	.7	3.5
West	106.3	107.5	108.9	110.0	110.9	111.9	112.9	114.1	114.9	.7	3.6
Workers, by area size¹											
Metropolitan areas	107.1	108.5	109.8	111.0	111.8	113.1	113.9	114.8	115.6	.7	3.4
Other areas	106.8	108.4	109.9	110.7	111.2	113.1	113.7	114.8	115.6	.7	4.0
WAGES AND SALARIES											
Workers, by bargaining status¹											
Union	105.1	106.2	107.1	108.0	108.9	109.8	110.8	111.7	112.3	.5	3.1
Goods-producing	105.0	106.2	107.1	107.7	108.7	109.6	110.2	111.1	111.7	.5	2.8
Service-producing	105.2	106.1	107.0	108.4	109.2	110.1	111.5	112.5	113.1	.5	3.6
Manufacturing	105.5	106.7	107.5	108.3	109.4	110.4	110.9	111.7	112.5	.7	2.8
Nonmanufacturing	104.8	105.8	106.7	107.9	108.6	109.4	110.7	111.7	112.2	.4	3.3
Nonunion	106.4	107.6	108.7	109.7	110.3	111.2	111.8	112.4	113.1	.6	2.5
Goods-producing	106.1	107.3	108.3	109.2	110.1	111.2	111.9	112.6	113.3	.6	2.9
Service-producing	106.5	107.8	108.9	109.9	110.4	111.2	111.7	112.3	113.0	.6	2.4
Manufacturing	106.5	107.7	108.8	109.7	110.7	111.9	112.7	113.4	114.2	.7	3.2
Nonmanufacturing	106.3	107.6	108.7	109.6	110.1	110.9	111.4	112.0	112.7	.6	2.4
Workers, by region¹											
Northeast	106.9	108.3	109.4	110.3	110.9	111.7	112.2	113.0	113.7	.6	2.5
South	106.1	107.4	108.5	109.2	109.6	110.8	111.5	112.0	112.7	.6	2.8
Midwest (formerly North Central)	105.8	106.9	107.7	108.9	109.9	110.7	111.3	111.8	112.5	.6	2.4
West	105.4	106.4	107.6	108.6	109.4	110.2	111.1	112.2	112.8	.5	3.1
Workers, by area size¹											
Metropolitan areas	106.1	107.3	108.4	109.3	110.1	110.9	111.6	112.3	112.9	.5	2.5
Other areas	106.0	107.2	108.4	109.0	109.4	110.7	111.2	112.0	112.8	.7	3.1

¹ The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see the

Monthly Labor Review Technical Note, "Estimation procedures for the Employment Cost Index," May 1982.

25. Percent of full-time employees participating in employer-provided benefit plans, 1980-91

Item	Medium and large private establishments ¹										Small private establishments ²	State and local governments ³	
	1980	1981	1982	1983	1984	1985	1986	1988	1989	1991	1990	1987	1990
Time-off plans													
Participants with:													
Paid lunch time	10	10	9	11	9	10	10	11	10	8	8	⁴ 17	11
Average minutes per day	-	-	25	25	26	27	27	29	26	30	37	34	36
Paid rest time	75	75	76	74	73	72	72	72	71	67	48	⁴ 58	56
Average minutes per day	-	-	25	25	26	26	26	26	26	26	27	29	29
Paid funeral leave	-	-	-	-	-	88	88	85	84	80	47	56	63
Average days per occurrence	-	-	-	-	-	3.2	3.2	3.2	3.3	3.3	2.9	3.7	3.7
Paid holidays	99	99	99	99	99	98	99	96	97	92	84	81	74
Average days per year	10.1	10.2	10.0	9.8	9.8	10.1	10.0	9.4	9.2	10.2	9.5	10.9	13.6
Paid personal leave	20	23	24	25	23	26	25	24	22	21	11	38	39
Average days per year	-	-	3.8	3.7	3.6	3.7	3.7	3.3	3.1	3.3	2.8	2.7	2.9
Paid vacations	100	99	99	100	99	99	100	98	97	96	88	72	67
Paid sick leave	62	65	67	67	67	67	70	69	68	67	47	97	95
Unpaid maternity leave	-	-	-	-	-	-	-	33	37	37	17	57	51
Unpaid paternity leave	-	-	-	-	-	-	-	16	18	26	8	30	33
Insurance plans													
Participants in medical care plans	97	97	97	96	97	96	95	90	92	83	69	93	93
Participants with coverage for:													
Home health care	-	-	-	37	46	56	66	76	75	81	79	76	82
Extended care facilities	58	60	62	58	62	67	70	79	80	80	83	78	79
Mental health care	98	99	99	99	99	99	99	98	97	98	98	98	99
Alcohol abuse treatment	-	-	50	53	61	68	70	80	97	97	97	87	99
Drug abuse treatment	-	-	37	43	52	61	66	74	96	96	94	86	98
Participants with employee contribution required for:													
Self coverage	26	27	27	33	36	36	43	44	47	51	42	35	38
Average monthly contribution	-	-	-	\$10.13	\$11.93	\$12.05	\$12.80	\$19.29	\$25.31	\$26.60	\$25.13	\$15.74	\$25.53
Family coverage	46	49	51	54	58	56	63	64	66	69	67	71	65
Average monthly contribution ⁵	-	-	-	\$32.51	\$35.93	\$38.33	\$41.40	\$60.07	\$72.10	\$96.97	\$109.34	\$71.89	\$117.59
Participants in life insurance plans	96	96	96	96	96	96	96	92	94	94	64	85	88
Participants with:													
Accidental death and dismemberment insurance	69	72	72	72	74	73	72	76	71	71	78	67	67
Survivor income benefits	-	-	-	-	-	13	10	8	7	6	1	1	1
Retiree protection available	-	64	64	66	64	62	59	49	42	44	19	55	45
Participants in long-term disability insurance plans	40	41	43	45	47	48	48	42	45	40	19	31	27
Participants in sickness and accident insurance plans	54	50	51	49	51	52	49	46	43	45	26	14	21
Retirement plans													
Participants in defined benefit pension plans ⁶	84	84	84	82	82	80	76	63	63	59	20	93	90
Participants with:													
Normal retirement prior to age 65	55	56	58	64	63	67	64	59	62	55	54	92	89
Early retirement available	98	98	97	97	97	97	98	98	97	98	95	90	88
Ad hoc pension increase in last 5 years	-	-	-	51	47	41	35	26	22	7	7	33	16
Terminal earnings formula	53	50	52	54	54	57	57	55	64	56	58	100	100
Benefit coordinated with Social Security	45	43	45	55	56	61	62	62	63	54	49	18	8
Participants in defined contribution plans	-	-	-	-	-	⁷ 53	⁷ 60	45	48	48	31	9	9
Participants in plans with tax-deferred savings arrangements	-	-	-	-	-	26	33	36	41	44	17	28	45
Other benefits													
Employees eligible for:													
Flexible benefits plans	-	-	-	-	-	-	2	5	9	10	1	5	5
Reimbursement accounts	-	-	-	-	-	-	5	12	23	36	8	5	31

¹ From 1979 to 1986, data were collected in private sector establishments with a minimum employment varying from 50 to 250 employees, depending upon industry. In addition, coverage in service industries was limited. Beginning in 1988, data were collected in all private sector establishments employing 100 workers or more in all industries.

² Includes private sector establishments with fewer than 100 workers.
³ In 1987, coverage excluded local governments employing fewer than 50 workers. In 1990, coverage included all State and local governments.

⁴ Data exclude college teachers.
⁵ Data for 1983 refer to the average monthly employee contribution for dependent coverage, excluding the employee. Beginning in 1984, data refer

to the average monthly employee contribution for family coverage, which includes the employee.

⁶ Prior to 1985, data on participation in defined benefit pension plans included a small percentage of workers participating in money purchase pension plans. Beginning in 1985, these workers were classified as participating in defined contribution plans.

⁷ Includes employees who participated in Payroll-based Employee Stock Ownership Plans. Beginning in 1987, these plans were no longer available.

NOTE: Dash indicates data were not collected in this year.

26. Specified compensation and wage rate changes from contract settlements, and wage rate changes under all agreements, private industry collective bargaining agreements covering 1,000 workers or more (in percent)

Measure	Annual average		Quarterly average							
	1990	1991	1991				1992			
			I	II	III	IV	I	II	III	IV
Changes under settlements:										
Total compensation ¹ changes, ² settlements covering 5,000 workers or more:										
First year of contract	4.6	4.1	3.8	4.8	3.7	3.6	2.7	3.6	3.3	1.4
Annual average over life of contract	3.2	3.4	3.0	3.9	3.2	2.9	3.5	3.6	3.0	2.7
Wage changes, settlements covering 1,000 workers or more:										
First year of contract	4.0	3.6	4.3	3.6	3.2	3.7	3.1	2.8	2.9	1.8
Annual average over life of contract	3.2	3.2	3.3	3.5	3.0	3.2	3.1	3.0	3.1	2.6
Wage changes under all agreements:										
Average wage change ³	3.5	3.6	.7	1.0	1.1	.7	.6	1.0	1.0	.4
Source:										
Current settlements	1.3	1.1	.2	.4	.3	.3	.1	.2	.3	.2
Prior settlements	1.5	1.9	.4	.6	.7	.3	.4	.7	.6	.2
COLA provisions .....	.7	.5	.2	.1	.1	.1	.1	.1	.1	.1

¹ Compensation includes wages, salaries, and employers' cost of employee benefits when contract is negotiated.

² Changes are the net result of increases, decreases, and zero change in

compensation or wages.

³ Because of rounding, total may not equal sum of parts.

27. Average specified compensation and wage rate changes, private industry collective bargaining settlements covering 1,000 workers or more during 4-quarter periods (in percent)

Measure	Average for four quarters ending--							
	1991				1992			
	I	II	III	IV	I	II	III	IV
Specified total compensation changes, settlements covering 5,000 workers or more, all industries:								
First year of contract	4.5	4.4	4.3	4.1	4.0	3.6	3.5	3.0
Annual average over life of contract	3.1	3.1	3.3	3.4	3.4	3.2	3.2	3.1
Specified wage changes, settlements covering 1,000 workers or more:								
All industries:								
First year of contract	4.1	3.8	3.7	3.6	3.5	3.2	3.1	2.7
Contracts with COLA clauses	3.5	3.4	3.3	3.4	3.3	3.0	3.1	2.7
Contracts without COLA clauses	4.5	4.1	3.9	3.7	3.5	3.2	3.1	2.7
Annual average over life of contract	3.1	3.0	3.1	3.2	3.2	3.1	3.1	3.0
Contracts with COLA clauses	1.9	2.1	2.2	3.0	3.0	2.6	2.6	2.5
Contracts without COLA clauses	4.0	3.7	3.4	3.3	3.3	3.2	3.2	3.1
Manufacturing:								
First year of contract	4.0	3.7	3.9	3.9	3.5	3.1	3.0	2.6
Contracts with COLA clauses	(¹)	(¹)	(¹)	3.2	3.2	2.7	2.2	1.6
Contracts without COLA clauses	(¹)	(¹)	(¹)	4.8	4.0	3.7	3.6	3.4
Annual average over life of contract	2.0	2.1	2.7	3.1	3.0	2.7	2.7	2.6
Contracts with COLA clauses	(¹)	(¹)	(¹)	2.7	2.7	2.1	1.8	1.9
Contracts without COLA clauses	(¹)	(¹)	(¹)	3.7	3.5	3.3	3.3	3.2
Nonmanufacturing:								
First year of contract	4.1	3.9	3.6	3.4	3.4	3.2	3.1	2.7
Contracts with COLA clauses	(¹)	(¹)	(¹)	3.9	3.8	3.8	3.8	3.6
Contracts without COLA clauses	(¹)	(¹)	(¹)	3.4	3.4	3.2	3.0	2.6
Annual average over life of contract	3.9	3.7	3.4	3.3	3.3	3.2	3.2	3.0
Contracts with COLA clauses	(¹)	(¹)	(¹)	4.1	4.1	3.7	3.3	3.0
Contracts without COLA clauses	(¹)	(¹)	(¹)	3.2	3.3	3.2	3.2	3.0
Construction:								
First year of contract	3.7	3.1	2.2	2.2	2.3	2.3	2.0	2.0
Contracts with COLA clauses	(¹)	(²)	(²)	(²)	(²)	(¹)	(¹)	(¹)
Contracts without COLA clauses	(¹)	(²)	(²)	(²)	2.3	(¹)	(¹)	(¹)
Annual average over life of contract	4.2	3.6	2.9	2.9	3.0	2.7	2.5	2.4
Contracts with COLA clauses	(¹)	(²)	(²)	(²)	(²)	(¹)	(¹)	(¹)
Contracts without COLA clauses	(¹)	(²)	(²)	(²)	3.0	(¹)	(¹)	(¹)

¹ Data do not meet publication standards.

² None of the settlements included COLA provisions.

28. Average wage rate changes, private industry collective bargaining agreements covering 1,000 workers or more during 4-quarter periods (in percent)

Measure	Average for four quarters ending--						
	1991			1992			
	II	III	IV	I	II	III	IV
Average wage change ¹	3.4	3.5	3.6	3.5	3.4	3.2	3.1
Source:							
Current settlements	1.3	1.1	1.1	1.1	.9	.9	.8
Prior settlements	1.6	1.8	1.9	2.0	2.0	1.9	1.9
COLA provisions .....	.5	.6	.5	.4	.4	.4	.4
Average wage increase	4.2	4.1	4.0	3.8	3.9	3.8	3.7
Source:							
Current settlements	3.9	3.8	4.2	4.0	3.9	3.6	3.6
Prior settlements	3.4	3.6	3.7	3.7	3.7	3.7	3.8
COLA provisions	2.4	2.4	2.0	1.8	1.9	2.1	2.0

¹ Because of rounding, total may not equal sum of parts.

29. Specified compensation and wage rate changes from contract settlements, and wage rate changes under all agreements, State and local government collective bargaining agreements covering 1,000 workers or more (in percent)

Measure	Annual average		
	1990	1991	1992
Changes under settlements:			
Total compensation ¹ changes, ² settlements covering 5,000 workers or more:			
First year of contract	5.1	2.1	.6
Annual average over life of contract	5.1	2.7	1.9
Wage changes, settlements covering 1,000 workers or more:			
First year of contract	4.9	2.6	1.1
Annual average over life of contract	5.0	2.6	2.1
Wage changes under all agreements:			
Average wage change ³	4.6	1.0	1.9
Source:			
Current settlements	2.0	.2	.8
Prior settlements	2.6	.7	1.1
COLA provisions	(⁴)	.1	(⁴)

¹ Compensation includes wages, salaries, and employers' cost of employee benefits when contract is negotiated.

² Changes are the net result of increases, decreases, and zero change in

compensation or wages.

³ Because of rounding, total may not equal sum of parts.

⁴ Less than 0.05 percent.

30. Work stoppages involving 1,000 workers or more

Measure	Annual totals		1992										1993		
	1991	1992	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
Number of stoppages:															
Beginning in period	40	35	1	4	6	6	1	3	8	5	0	0	2	1	2
In effect during period	45	41	5	9	11	12	5	6	14	9	3	2	3	3	5
Workers involved:															
Beginning in period (in thousands)	392.0	363.8	2.7	15.2	9.6	242.6	3.8	56.8	16.2	14.5	.0	.0	220	50	84
In effect during period (in thousands)	412.0	388.0	17.9	34.7	23.5	258.7	11.5	63.8	80.0	23.5	7.0	2.6	236	76	177
Days idle:															
Number (in thousands)	4,583.6	3,988.6	366.8	414.5	321.8	741.2	157.0	213.9	578.4	280.6	98.6	48.2	564	1,394	996
Percent of estimated working time ¹ .....	.02	.01	.01	.02	.01	.03	.01	.01	.02	.01	.01	.01	1	1	1

¹ Agricultural and government employees are included in the total employed and total working time; private household, forestry, and fishery employees are excluded. An explanation of the measurement of idleness as a percentage of the total time worked is found

in "'Total economy' measure of strike idleness," *Monthly Labor Review*, October 1968, pp. 54-56.

^P = preliminary.

32. Consumer Price Index: U.S. city average and available local area data: all items

(1982-84 = 100, unless otherwise indicated)

Area ¹	Pricing schedule ²	All Urban Consumers							Urban Wage Earners						
		1992				1993			1992				1993		
		Mar.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Mar.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.
U.S. city average	M	139.3	139.5	142.0	141.9	142.6	143.1	143.6	137.0	137.3	139.8	139.8	140.3	140.7	141.1
Region and area size³															
Northeast urban	M	146.2	146.3	149.0	148.9	149.7	150.4	150.9	144.1	144.2	147.1	146.9	147.6	148.2	148.7
Size A - More than 1,200,000	M	146.8	146.8	149.6	149.4	150.3	150.9	151.6	143.6	143.6	146.7	146.6	147.3	147.8	148.4
Size B - 500,000 to 1,200,000	M	145.7	145.8	148.3	147.6	148.0	148.9	149.3	143.8	144.1	146.4	145.7	146.2	147.0	147.3
Size C - 50,000 to 500,000	M	144.2	144.3	146.9	147.2	148.5	149.1	149.1	146.2	146.3	148.8	149.0	150.2	150.7	150.7
North Central urban	M	134.8	135.1	137.6	137.7	138.1	138.6	139.0	132.2	132.6	135.0	135.1	135.4	135.8	136.2
Size A - More than 1,200,000	M	136.0	136.3	138.5	138.9	139.1	139.6	140.1	132.5	132.8	135.2	135.5	135.6	136.1	136.5
Size B - 360,000 to 1,200,000	M	133.4	133.8	136.1	136.3	137.3	137.3	137.3	130.6	131.0	133.1	133.1	134.1	134.0	134.1
Size C - 50,000 to 360,000	M	136.2	136.4	139.4	139.2	139.3	140.1	140.4	134.3	134.5	137.3	137.1	137.2	138.0	138.2
Size D - Nonmetropolitan (less than 50,000)	M	130.0	130.3	133.4	132.8	133.0	133.6	134.7	129.3	129.7	132.7	132.2	132.3	132.7	133.8
South urban	M	135.5	135.9	138.1	137.9	138.4	139.1	139.7	134.2	134.5	136.9	136.8	137.2	137.6	138.3
Size A - More than 1,200,000	M	136.0	136.1	138.3	138.0	138.9	139.8	140.4	134.4	134.6	136.8	136.6	137.2	138.0	138.5
Size B - 450,000 to 1,200,000	M	137.0	137.4	139.7	139.8	139.9	140.3	141.6	133.8	134.2	136.8	136.8	136.8	136.9	138.2
Size C - 50,000 to 450,000	M	134.6	135.1	137.3	137.2	137.8	138.1	138.6	134.5	134.9	137.5	137.4	137.9	138.1	138.5
Size D - Nonmetropolitan (less than 50,000)	M	133.6	134.1	136.0	136.4	136.4	136.7	137.0	133.7	134.2	136.4	136.7	136.6	136.8	137.0
West urban	M	141.1	141.3	143.9	143.9	144.7	145.2	145.2	138.7	139.0	141.6	141.5	142.2	142.7	142.7
Size A - More than 1,250,000	M	143.0	143.2	145.7	145.8	146.7	147.2	147.2	139.0	139.3	141.8	141.8	142.6	143.1	143.0
Size C - 50,000 to 330,000	M	138.3	138.7	142.2	142.1	142.7	143.1	143.8	136.8	137.1	140.4	140.2	140.8	141.3	141.8
Size classes:															
A (12/86 = 100)	M	126.7	126.8	129.0	129.0	129.7	130.3	130.6	125.8	126.0	128.4	128.3	128.8	129.3	129.7
B	M	138.5	138.8	141.2	141.1	141.5	141.9	142.5	136.3	136.7	139.0	138.9	139.3	139.5	140.1
C	M	137.4	137.7	140.4	140.4	140.9	141.5	141.8	137.0	137.3	140.1	140.0	140.5	141.0	141.3
D	M	134.4	134.8	137.1	137.1	137.3	137.7	138.3	134.0	134.3	136.9	136.8	137.0	137.3	137.8
Selected local areas															
Chicago, IL-Northwestern IN ...	M	139.7	139.8	142.4	142.9	143.2	143.6	144.1	135.2	135.4	138.2	138.5	138.9	139.1	139.5
Los Angeles-Long Beach, Anaheim, CA	M	145.5	145.8	148.2	148.2	149.2	150.0	149.8	141.0	141.3	143.5	143.5	144.4	145.0	144.8
New York, NY-Northeastern NJ	M	149.1	149.2	152.2	151.9	153.0	153.6	154.1	145.8	145.9	149.2	149.1	149.9	150.3	150.7
Philadelphia, PA-NJ	M	145.4	145.4	147.5	147.5	147.5	148.5	149.3	145.0	145.1	147.6	147.4	147.4	148.6	149.0
San Francisco-Oakland, CA	M	141.9	141.6	144.2	144.3	145.1	145.5	145.7	139.9	139.6	142.3	142.3	143.0	143.5	143.8
Baltimore, MD	1	138.7	-	141.1	-	142.0	-	142.6	137.9	-	140.6	-	141.3	-	141.8
Boston, MA	1	147.9	-	150.2	-	151.8	-	153.9	147.2	-	149.8	-	151.0	-	153.8
Cleveland, OH	1	136.3	-	137.1	-	137.5	-	138.8	129.7	-	130.8	-	130.8	-	131.8
Miami, FL	1	134.5	-	135.9	-	137.8	-	139.2	132.3	-	134.2	-	135.9	-	137.1
St. Louis, MO-IL	1	132.6	-	136.0	-	135.9	-	136.1	132.0	-	135.6	-	135.4	-	135.5
Washington, DC-MD-VA	1	143.0	-	146.9	-	147.8	-	148.5	141.3	-	145.1	-	145.6	-	146.2
Dallas-Ft. Worth, TX	2	-	132.5	-	134.6	-	135.4	-	-	131.5	-	134.1	-	134.8	-
Detroit, MI	2	-	135.3	-	137.1	-	138.3	-	-	131.7	-	133.1	-	134.4	-
Houston, TX	2	-	128.7	-	129.3	-	131.7	-	-	128.4	-	129.2	-	131.3	-
Pittsburgh, PA	2	-	135.1	-	137.3	-	139.2	-	-	129.4	-	131.4	-	133.2	-

¹ Area is the Consolidated Metropolitan Statistical Area (CMSA), exclusive of farms and military. Area definitions are those established by the Office of Management and Budget in 1983, except for Boston-Lawrence-Salem, MA-NH Area (excludes Monroe County); and Milwaukee, WI Area (includes only the Milwaukee MSA). Definitions do not include revisions made since 1983.

² Foods, fuels, and several other items priced every month in all areas; most other goods and services priced as indicated.
M - Every month.

1 - January, March, May, July, September, and November.
2 - February, April, June, August, October, and December.

³ Regions are defined as the four Census regions.
- Data not available.

NOTE: Local area CPI indexes are byproducts of the national CPI program. Because each local index is a small subset of the national index, it has a smaller sample size and is, therefore, subject to substantially more sampling and other measurement error than the national index. As a result, local area indexes show greater volatility than the national index, although their long-term trends are quite similar. Therefore, the Bureau of Labor Statistics strongly urges users to consider adopting the national average CPI for use in escalator clauses.

33. Annual data: Consumer Price Index, U.S. city average, all items and major groups

(1982-84 = 100)

Series	1984	1985	1986	1987	1988	1989	1990	1991	1992
Consumer Price Index for All Urban Consumers:									
All items:									
Index	103.9	107.6	109.6	113.6	118.3	124.0	130.7	136.2	140.3
Percent change	4.3	3.6	1.9	3.6	4.1	4.8	5.4	4.2	3.0
Food and beverages:									
Index	103.2	105.6	109.1	113.5	118.2	124.9	132.1	136.8	138.7
Percent change	3.7	2.3	3.3	4.0	4.1	5.7	5.8	3.6	1.4
Housing:									
Index	103.6	107.7	110.9	114.2	118.5	123.0	128.5	133.6	137.5
Percent change	4.1	4.0	3.0	3.0	3.8	3.8	4.5	4.0	2.9
Apparel and upkeep:									
Index	102.1	105.0	105.9	110.6	115.4	118.6	124.1	128.7	131.9
Percent change	1.9	2.8	.9	4.4	4.3	2.8	4.6	3.7	2.5
Transportation:									
Index	103.7	106.4	102.3	105.4	108.7	114.1	120.5	123.8	126.5
Percent change	4.4	2.6	-3.9	3.0	3.1	5.0	5.6	2.7	2.2
Medical care:									
Index	106.8	113.5	122.0	130.1	138.6	149.3	162.8	177.0	190.1
Percent change	6.2	6.3	7.5	6.6	6.5	7.7	9.0	8.7	7.4
Entertainment:									
Index	103.8	107.9	111.6	115.3	120.3	126.5	132.4	138.4	142.3
Percent change	3.7	3.9	3.4	3.3	4.3	5.2	4.7	4.5	2.8
Other goods and services:									
Index	107.9	114.5	121.4	128.5	137.0	147.7	159.0	171.6	183.3
Percent change	6.7	6.1	6.0	5.8	6.6	7.8	7.7	7.9	6.8
Consumer Price Index for Urban Wage Earners and Clerical Workers:									
All items:									
Index	103.3	106.9	108.6	112.5	117.0	122.6	129.0	134.3	138.2
Percent change	3.5	3.5	1.6	3.6	4.0	4.8	5.2	4.1	2.9

34. Producer Price Indexes, by stage of processing

(1982=100)

Grouping	Annual average		1992									1993		
	1991	1992	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Finished goods	121.7	123.2	122.4	123.2	123.9	123.7	123.6	123.3	124.4	124.0	123.8	124.0	124.3	124.6
Finished consumer goods	120.5	121.7	120.7	121.7	122.6	122.4	122.2	122.2	122.9	122.4	122.1	122.3	122.6	123.0
Finished consumer goods	124.1	123.2	122.8	123.1	123.1	122.8	123.4	123.3	123.8	123.4	124.1	123.8	124.0	124.6
Finished consumer goods excluding foods	118.7	120.8	119.6	120.9	122.1	122.0	121.5	121.4	122.3	121.7	121.1	121.4	121.8	122.1
Nondurable goods less food	115.0	117.3	115.7	117.5	119.5	119.2	118.6	119.3	118.9	118.1	117.2	117.7	118.0	118.4
Durable goods	123.9	125.7	125.6	125.6	125.2	125.4	125.1	123.4	127.1	127.1	127.0	127.1	127.6	127.5
Capital equipment	126.7	129.1	129.1	129.0	128.9	128.8	128.9	128.1	130.2	130.2	130.1	130.4	130.9	130.9
Intermediate materials, supplies, and components	114.4	114.7	113.8	114.5	115.4	115.5	115.5	115.8	115.4	115.0	114.9	115.3	115.5	115.9
Materials and components for manufacturing	118.1	117.9	117.6	117.9	118.2	118.3	118.3	118.4	118.1	118.0	117.9	118.4	118.7	118.7
Materials for food manufacturing	115.3	113.9	113.6	114.8	115.5	114.8	114.0	114.5	112.9	112.8	113.3	113.2	112.6	113.2
Materials for nondurable manufacturing	116.7	115.4	114.8	115.0	115.6	115.8	115.9	116.1	116.0	116.0	115.5	115.7	115.9	115.6
Materials for durable manufacturing	117.2	117.2	117.2	117.3	117.6	117.9	118.2	118.1	117.1	116.7	117.1	117.9	119.0	119.7
Components for manufacturing	121.0	121.9	121.8	122.0	121.9	122.0	122.0	122.1	122.2	122.2	122.1	122.6	122.8	122.7
Materials and components for construction	124.5	126.5	126.8	126.8	126.5	126.3	126.4	126.8	126.7	126.9	127.8	129.1	130.7	132.5
Processed fuels and lubricants	85.3	84.7	80.7	83.6	88.1	88.2	88.0	89.0	87.2	85.0	84.5	83.7	83.3	83.7
Containers	128.1	127.7	127.8	127.7	127.6	127.7	127.6	127.7	127.8	127.8	127.9	127.8	126.9	127.0
Supplies	121.4	122.7	122.4	122.7	122.7	122.7	122.7	123.0	123.2	123.3	123.3	123.9	124.1	124.2
Crude materials for further processing ...	101.2	100.3	98.8	101.2	102.1	101.7	100.6	102.4	101.9	101.8	100.5	101.4	101.1	102.6
Foodstuffs and feedstuffs	105.5	105.1	105.5	108.4	107.4	105.0	103.7	102.9	103.7	102.8	104.4	105.2	105.6	108.2
Crude nonfood materials	94.6	93.4	90.7	92.8	94.8	95.7	94.8	98.0	96.8	97.2	94.2	95.1	94.4	95.1
Special groupings:														
Finished goods, excluding foods	120.9	123.1	122.3	123.1	124.0	123.8	123.5	123.2	124.5	124.1	123.6	123.9	124.3	124.5
Finished energy goods	78.1	77.8	75.4	77.8	81.0	80.4	80.2	80.8	80.0	78.4	76.5	76.6	76.9	77.6
Finished goods less energy	129.1	131.1	130.8	131.1	131.0	131.0	130.9	130.4	132.0	131.9	132.2	132.4	132.7	132.9
Finished consumer goods less energy	130.0	131.8	131.5	131.8	131.8	131.8	131.6	131.3	132.6	132.5	132.9	133.1	133.4	133.6
Finished goods less food and energy	131.1	134.1	134.0	134.2	134.1	134.2	133.8	133.2	135.2	135.2	135.3	135.7	136.2	136.2
Finished consumer goods less food and energy	133.7	137.2	137.0	137.5	137.3	137.5	136.8	136.4	138.2	138.3	138.6	139.0	139.4	139.4
Consumer nondurable goods less food and energy	140.8	145.8	145.4	146.3	146.4	146.6	145.6	146.3	146.4	146.6	147.1	147.9	148.2	148.2
Intermediate materials less foods and feeds	114.6	114.9	114.0	114.7	115.6	115.7	115.8	116.1	115.7	115.2	115.2	115.5	115.9	116.2
Intermediate foods and feeds	111.1	110.7	110.4	111.5	112.3	111.2	110.3	111.0	109.7	109.6	110.7	110.8	109.7	109.7
Intermediate energy goods	85.1	84.5	80.6	83.4	87.8	88.0	87.8	88.7	87.0	84.9	84.3	83.6	83.2	83.7
Intermediate goods less energy	120.8	121.3	121.1	121.3	121.4	121.4	121.5	121.7	121.5	121.5	121.6	122.2	122.6	123.0
Intermediate materials less foods and energy	121.4	121.9	121.8	121.9	122.0	122.1	122.2	122.4	122.3	122.3	122.3	122.9	123.5	123.8
Crude energy materials	80.4	78.7	75.0	77.4	80.1	81.0	79.7	83.8	82.9	83.8	79.2	79.2	77.2	77.8
Crude materials less energy	110.9	110.7	111.2	113.5	112.6	111.1	110.3	109.7	109.7	108.7	110.6	112.3	113.5	115.7
Crude nonfood materials less energy	128.2	128.4	129.1	129.7	129.2	130.0	130.8	130.4	128.2	127.1	129.6	133.9	137.3	138.4

35. Producer Price indexes, by durability of product

(1982=100)

Grouping	Annual average		1992									1993		
	1991	1992	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Total durable goods	122.9	124.3	124.3	124.4	124.3	124.3	124.4	124.1	125.0	124.8	125.0	125.5	126.1	126.3
Total nondurable goods	111.7	111.9	110.6	112.0	113.3	113.1	112.7	113.5	113.1	112.6	112.2	112.5	112.5	113.1
Total manufactures	119.0	120.1	119.7	120.3	120.6	120.5	120.4	120.4	120.9	120.8	120.5	120.9	121.4	121.8
Durable	122.7	124.3	124.2	124.2	124.2	124.2	124.3	124.0	125.0	124.9	125.0	125.4	126.0	126.3
Nondurable	115.2	115.8	115.1	116.3	117.0	116.7	116.4	116.8	116.8	116.6	116.0	116.4	116.9	117.3
Total raw or slightly processed goods	104.4	103.7	101.2	103.1	105.5	105.6	105.1	106.4	105.2	104.1	104.1	104.2	103.4	104.2
Durable	132.2	128.0	130.2	130.2	129.1	130.4	131.6	129.2	125.7	123.4	125.5	129.9	131.9	129.9
Nondurable	103.0	102.5	99.7	101.7	104.2	104.3	103.8	105.2	104.1	103.0	103.0	102.9	102.0	102.8

36. Producer price indexes for the net output of major industry groups

(December 1984=100, unless otherwise indicated)

Industry	SIC	Annual average		1992									1993		
		1991	1992	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Total mining industries		78.4	76.8	73.4	75.1	76.3	78.2	77.4	80.8	79.7	82.0	78.4	78.8	75.8	75.7
Metal mining	10	82.2	76.7	74.6	76.2	77.3	79.3	81.4	79.2	77.4	74.3	75.0	73.5	72.5	70.2
Anthracite mining (12/85=100)	11	105.5	105.6	105.5	104.9	104.9	105.1	105.2	105.9	105.9	105.6	105.5	105.5	105.6	105.6
Bituminous coal and lignite mining (12/85=100)	12	96.3	94.0	94.1	94.7	94.4	94.2	94.2	93.6	93.9	93.7	94.0	93.1	93.5	93.4
Oil and gas extraction (12/85=100)	13	77.9	76.3	71.8	73.9	75.5	78.1	76.9	81.8	80.3	83.7	78.6	79.5	75.2	75.3
Mining and quarrying of nonmetallic minerals, except fuels	14	116.3	117.4	117.6	117.7	117.7	117.8	117.8	117.6	117.4	117.3	117.5	118.2	117.9	118.0
Total manufacturing industries		115.9	117.3	116.9	117.6	117.9	117.8	117.6	117.6	118.3	118.2	117.9	118.3	118.8	119.2
Food and kindred products	20	116.5	116.9	116.5	117.3	117.5	117.2	117.1	117.2	117.0	116.8	117.3	117.4	117.5	117.7
Tobacco manufactures	21	207.5	230.2	227.9	236.2	236.3	236.4	222.8	230.3	230.4	232.3	239.3	244.7	244.8	244.8
Textile mill products	22	112.5	113.6	113.5	113.8	114.0	113.8	113.8	113.8	113.8	113.7	113.5	113.6	113.5	113.5
Apparel and other finished products made from fabrics and similar materials	23	116.0	118.0	117.7	117.5	117.6	118.0	118.2	118.3	118.5	118.7	118.8	119.0	119.1	119.0
Lumber and wood products, except furniture	24	119.4	129.6	130.0	130.1	129.1	128.4	129.0	131.5	131.3	131.8	134.8	139.0	144.9	151.1
Furniture and fixtures	25	121.6	122.9	122.8	122.9	122.5	123.0	123.2	123.3	123.1	123.5	123.6	123.8	124.4	124.6
Paper and allied products	26	121.1	121.2	122.0	122.0	121.8	121.5	121.5	121.8	121.5	121.5	121.2	120.6	120.8	121.0
Printing, publishing, and allied industries	27	136.4	140.7	140.2	140.6	140.4	140.7	140.9	141.3	142.0	142.1	142.1	143.6	144.2	144.9
Chemicals and allied products	28	124.4	125.8	125.1	125.5	126.0	126.5	126.5	126.6	126.8	126.9	126.5	127.1	127.3	127.0
Petroleum refining and related products	29	83.1	80.3	77.2	81.9	85.7	84.2	83.5	84.5	84.6	83.1	77.4	77.2	78.1	79.8
Rubber and miscellaneous plastic products	30	113.7	114.2	113.8	114.0	114.1	114.3	114.3	114.5	114.7	114.8	114.7	116.0	116.0	115.1
Leather and leather products	31	124.8	126.9	126.3	126.8	127.4	126.8	127.7	127.2	127.1	127.1	127.6	128.6	128.2	128.4
Stone, clay, glass, and concrete products	32	112.3	112.8	112.4	112.5	112.6	112.7	113.0	113.0	113.0	113.2	113.4	113.7	114.1	114.4
Primary metal industries	33	113.1	111.7	112.0	111.9	112.2	112.5	112.6	112.0	111.2	110.6	110.6	110.7	111.0	110.9
Fabricated metal products, except machinery and transportation equipment	34	116.6	117.2	117.2	117.2	117.1	117.2	117.3	117.3	117.5	117.5	117.6	117.6	117.6	117.8
Machinery, except electrical	35	116.4	116.7	116.9	116.9	116.7	116.5	116.6	116.6	116.5	116.6	116.6	116.9	117.1	116.9
Electrical and electronic machinery, equipment, and supplies	36	110.1	110.8	111.0	110.8	110.8	110.8	110.8	110.8	110.9	111.0	111.0	111.2	111.6	111.6
Transportation equipment	37	119.8	123.0	122.8	122.7	122.6	122.7	122.3	120.5	124.8	124.8	124.6	124.9	125.5	125.6
Measuring and controlling instruments; photographic, medical, optical goods; watches, clocks	38	116.8	118.6	117.9	118.3	118.5	118.6	118.8	118.9	119.4	119.7	119.5	119.9	120.6	120.7
Miscellaneous manufacturing industries (12/85=100)	39	117.5	119.4	119.2	119.4	119.5	119.6	119.8	120.1	120.3	120.0	120.0	120.7	120.7	120.7
Service industries:															
Pipelines, except natural gas (12/86=100)	46	96.1	96.4	96.3	96.4	96.5	96.6	96.6	96.6	96.5	96.5	96.5	96.5	96.5	96.5

37. Annual data: Producer Price Indexes, by stage of processing

(1982=100)

Index	1984	1985	1986	1987	1988	1989	1990	1991	1992
Finished goods:									
Total	103.7	104.7	103.2	105.4	108.0	113.6	119.2	121.7	123.2
Consumer goods	103.3	103.8	101.4	103.6	106.2	112.1	118.2	120.5	121.7
Capital equipment	105.2	107.5	109.7	111.7	114.3	118.8	122.9	126.7	129.1
Intermediate materials, supplies, and components:									
Total	103.1	102.7	99.1	101.5	107.1	112.0	114.5	114.4	114.7
Materials and components for manufacturing	104.1	103.3	102.2	105.3	113.2	118.1	118.7	118.1	117.9
Materials and components for construction	105.6	107.3	108.1	109.8	116.1	121.3	122.9	124.5	126.5
Processed fuels and lubricants	95.7	92.8	72.7	73.3	71.2	76.4	85.9	85.3	84.7
Containers	105.9	109.0	110.3	114.5	120.1	125.4	127.7	128.1	127.7
Supplies	104.1	104.4	105.6	107.7	113.7	118.1	119.4	121.4	122.7
Crude materials for further processing:									
Total	103.5	95.8	87.7	93.7	96.0	103.1	108.9	101.2	100.3
Foodstuffs and feedstuffs	104.7	94.8	93.2	96.2	106.1	111.2	113.1	105.5	105.1
Nonfood materials except fuel	102.2	96.9	81.6	87.9	85.5	93.4	101.5	94.6	93.4
Fuel	105.1	102.7	92.2	84.1	82.1	85.3	84.8	82.9	83.6

38. U.S. export price indexes by Standard International Trade Classification

(1985=100, unless otherwise indicated)

Category	1974 SITC	1990			1991				1992			
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
ALL COMMODITIES		113.3	114.3	114.9	115.1	114.7	114.2	114.4	114.9	115.3	115.3	115.0
Food	0	108.8	102.2	99.1	102.4	105.1	104.1	106.6	110.7	107.3	104.9	104.3
Meat and meat preparations	01	123.7	124.3	128.7	129.3	128.0	129.6	125.9	131.7	133.3	131.4	134.0
Fish and crustaceans	03	126.9	129.9	127.5	126.8	122.1	113.5	121.7	131.6	126.5	123.5	116.9
Grain and grain preparations	04	101.8	90.5	84.3	86.9	90.8	90.8	96.3	102.6	98.2	92.8	92.0
Vegetables and fruit	05	115.2	111.5	110.7	128.5	137.2	127.8	118.2	119.8	113.0	113.8	116.6
Animal feeds, excluding unmilled cereals	08	118.4	120.2	124.9	125.6	121.2	127.6	128.5	123.6	123.9	127.3	125.9
Miscellaneous food products	09	110.2	110.0	111.4	110.1	110.8	110.0	110.2	109.5	110.5	111.3	111.6
Beverages and tobacco	1	124.5	125.6	129.0	131.9	132.6	133.4	135.8	136.6	137.6	138.8	140.1
Tobacco and tobacco products	12	124.9	126.0	129.2	132.1	132.8	133.4	135.9	136.6	137.7	139.0	140.3
Crude materials	2	137.3	137.8	134.5	134.3	130.3	125.3	122.4	124.3	127.6	128.4	127.7
Raw hides and skins	21	162.0	150.0	142.3	129.5	125.6	110.4	123.7	121.4	124.5	127.5	133.7
Oilseeds	22	110.4	117.4	117.2	118.0	112.9	111.1	106.3	108.2	111.8	104.7	104.8
Crude rubber	23	115.5	116.4	119.4	122.7	120.3	122.8	120.8	118.7	117.7	119.6	119.5
Wood	24	179.2	173.9	168.5	171.4	171.9	174.1	173.7	184.8	193.4	210.5	219.5
Pulp and waste paper	25	174.3	168.0	167.1	162.3	150.8	137.3	136.6	138.3	143.7	146.5	137.5
Textile fibers	26	124.5	122.2	121.5	126.8	129.7	118.4	108.0	103.2	104.3	99.7	99.1
Crude minerals	27	99.7	100.0	100.1	101.0	100.7	98.2	98.4	99.3	99.3	99.1	95.3
Metal ores and metal scrap	28	142.6	150.7	139.4	137.7	127.2	124.4	117.5	122.5	121.5	122.5	117.1
Fuels and related products	3	88.7	103.3	106.5	91.2	87.5	87.4	88.4	80.8	84.2	85.3	84.2
Coal and coke	32	97.5	97.9	98.0	97.7	96.1	96.1	96.2	95.1	94.3	93.7	94.3
Crude petroleum and petroleum products	33	108.7	146.0	149.8	112.1	103.7	103.9	106.0	89.6	100.0	103.2	99.4
Fats and oils	4	94.6	90.8	92.9	89.6	86.2	86.8	84.3	84.1	87.1	87.5	90.8
Animal oils and fats	41	84.0	76.6	89.6	82.8	80.4	84.4	82.7	82.1	86.1	95.0	97.1
Fixed vegetable oils and fats	42	101.7	100.4	94.3	93.9	89.5	87.2	83.9	83.9	86.2	79.5	84.1
Chemicals and related products	5	115.5	119.1	124.0	122.6	118.1	116.2	115.3	115.1	115.4	115.1	113.5
Organic chemicals	51	118.6	125.6	132.7	127.3	118.2	111.9	111.9	111.8	114.4	116.1	112.7
Dyeing, tanning, and coloring materials	53	119.7	120.6	125.5	127.7	128.8	129.7	128.5	129.3	129.4	132.0	133.2
Medicinal and pharmaceutical products (12/85=100)	54	110.0	110.2	110.9	110.6	110.8	112.6	112.8	114.0	114.7	114.7	114.9
Essential oils, polish, and cleaning preparations	55	126.8	127.1	127.5	127.7	127.9	128.7	128.3	130.4	131.2	129.9	129.8
Fertilizers, manufactured	56	102.8	107.5	114.5	116.2	111.0	108.0	98.8	99.0	94.8	89.9	88.1
Artificial resins, plastics and cellulose	57	115.8	121.4	131.2	126.7	117.6	116.4	116.5	114.4	114.9	115.4	114.1
Chemical materials and products, n.e.s.	58	113.7	115.8	118.4	120.7	119.1	117.9	117.7	118.5	118.6	119.1	119.2
Intermediate manufactured products	6	123.0	123.6	123.4	123.7	123.3	122.9	122.9	123.5	124.0	124.5	124.3
Leather and furskins	61	126.0	125.0	122.8	122.2	118.1	115.9	115.3	113.7	112.7	114.5	113.8
Rubber manufactures	62	114.4	115.6	118.4	120.5	121.5	121.8	122.3	122.1	122.1	122.9	123.3
Paper and paperboard products	64	130.3	131.1	131.4	130.8	130.2	129.1	129.4	129.1	128.8	128.1	127.5
Textiles	65	118.3	118.4	119.5	122.2	123.7	123.1	123.5	125.3	125.5	125.9	126.3
Non-metallic mineral manufactures (9/85=100)	66	126.9	126.8	128.1	128.9	128.9	129.0	130.1	130.4	131.8	132.0	132.3
Iron and steel	67	117.4	117.1	117.8	118.9	119.1	119.2	119.2	118.4	119.2	119.7	120.0
Nonferrous metals	68	132.6	135.9	129.5	123.4	116.5	115.7	112.6	114.8	116.3	116.4	112.6
Metal manufactures, n.e.s.	69	117.1	117.4	118.3	119.9	120.5	120.8	121.3	121.5	121.6	122.4	123.4
Machinery and transport equipment, excluding military and commercial aircraft	7	110.1	110.5	111.1	112.8	113.5	114.0	114.3	114.8	115.2	115.4	115.4
Power generating machinery and equipment	71	117.2	117.6	118.5	121.5	123.0	123.9	124.6	126.4	128.7	128.5	128.9
Machinery specialized for particular industries	72	113.2	114.2	115.7	116.8	117.8	117.9	118.5	119.5	120.4	121.0	121.8
Metalworking machinery	73	121.1	121.2	124.2	126.7	129.4	129.7	130.3	131.9	132.6	132.6	132.4
General industrial machines and parts, n.e.s.	74	118.2	119.0	119.6	122.2	122.9	123.8	123.8	125.6	125.8	126.3	127.0
Office machines and automatic data processing equipment	75	94.6	94.5	93.3	93.5	92.7	91.6	90.6	90.0	89.2	88.5	87.0
Telecommunications, sound recording and reproducing equipment	76	111.2	111.8	112.4	115.1	118.2	119.9	121.0	119.4	120.4	120.8	120.7
Electrical machinery and equipment	77	107.5	107.2	107.5	107.6	108.2	110.1	110.9	112.2	111.4	111.9	111.5
Road vehicles and parts	78	111.0	111.5	112.8	113.7	114.1	114.4	115.2	115.3	115.9	116.1	116.7
Other transport equipment, excluding military and commercial aviation	79	121.3	122.5	124.2	133.5	136.5	137.0	137.0	135.6	137.3	138.6	139.1
Miscellaneous manufactured articles	8	116.4	118.1	120.0	121.4	122.4	122.8	123.5	124.3	124.8	125.0	125.1
Furniture and parts	82	122.2	122.0	124.4	126.6	127.5	127.6	127.3	128.6	128.2	127.7	128.2
Professional, scientific, and controlling instruments and apparatus	87	124.8	127.6	130.4	131.9	133.7	134.0	135.2	136.6	137.2	137.0	137.3
Photographic apparatus and supplies, optical goods, watches, and clocks	88	97.6	99.1	101.6	102.0	101.8	101.6	102.6	102.5	101.5	102.3	102.9
Miscellaneous manufactured articles, n.e.s.	89	112.6	113.3	114.1	116.1	116.3	117.0	116.8	117.3	118.4	119.0	118.7

39. U.S. import price indexes by Standard International Trade Classification

(1985=100, unless otherwise indicated)

Category	1974 SITC	1990		1991				1992			
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	
ALL COMMODITIES		128.8	124.5	122.4	122.3	123.5	123.1	124.3	125.7	123.8	
ALL COMMODITIES, EXCLUDING FUELS		132.6	133.5	131.7	131.3	132.9	133.7	133.4	135.0	133.7	
Food and live animals	0	116.2	116.2	116.1	114.8	116.1	118.3	111.0	111.8	111.8	
Meat and meat preparations	01	138.9	139.4	144.1	137.8	133.7	132.3	129.5	128.6	126.3	
Dairy products and eggs	02	137.7	133.5	131.6	132.1	133.8	133.7	133.6	138.8	131.9	
Fish and crustaceans	03	137.3	141.9	140.4	139.1	139.3	140.7	140.7	143.0	139.3	
Bakery goods, pasta products, grain, and grain preparations	04	158.8	157.6	148.2	147.7	154.5	153.3	152.6	162.2	154.9	
Fruits and vegetables	05	131.1	127.8	132.4	133.0	138.5	156.0	130.1	129.6	126.7	
Sugar, sugar preparations, and honey	06	118.4	114.0	113.2	113.4	113.4	113.2	111.6	112.1	108.6	
Coffee, tea, cocoa	07	65.7	65.8	62.1	61.7	61.9	56.6	51.5	51.3	60.4	
Beverages and tobacco	1	132.9	140.5	142.5	142.3	144.0	145.4	145.9	147.4	145.5	
Beverages	11	133.8	142.2	143.8	143.1	144.8	146.1	146.8	148.7	146.3	
Crude materials	2	123.9	123.0	123.9	119.2	118.8	123.3	123.8	125.9	125.2	
Crude rubber (including synthetic and reclaimed)	23	101.8	103.5	101.1	99.8	99.5	101.7	103.6	105.3	106.0	
Cork and wood	24	106.4	108.5	121.0	114.9	117.3	130.0	131.3	133.0	136.5	
Pulp and waste paper	25	166.0	152.6	141.1	126.8	123.6	127.6	132.7	138.6	131.9	
Textile fibers	26	113.7	105.6	108.7	107.7	-	-	-	-	-	
Crude fertilizers and crude minerals	27	98.8	99.6	98.8	94.6	89.8	87.9	87.1	87.3	83.1	
Metalliferous ores and metal scrap	28	153.6	153.5	149.2	149.6	148.5	148.1	145.3	147.1	144.5	
Crude animal and vegetable materials, n.e.s.	29	114.9	120.8	117.1	116.1	120.3	121.9	121.1	122.9	128.0	
Fuels and related products	3	108.2	76.6	72.5	74.1	73.7	66.2	75.5	76.0	71.5	
Crude petroleum and petroleum products	33	111.0	77.3	73.5	75.3	74.5	67.0	77.0	77.2	72.1	
Fats and oils	4	95.9	97.9	97.3	103.8	120.6	131.6	128.5	122.3	119.3	
Fixed vegetable oils and fats (9/87=100)	42	97.5	99.4	98.2	106.1	124.8	137.0	133.6	127.1	123.4	
Chemicals and related products	5	123.2	122.9	120.9	120.3	120.7	121.4	122.1	122.9	122.5	
Organic chemicals	51	121.0	117.7	114.0	111.1	112.2	112.1	111.9	111.5	109.2	
Inorganic chemicals	52	89.0	89.8	88.6	86.8	83.9	84.4	83.2	82.9	87.7	
Medicinal and pharmaceutical products	54	158.0	157.3	154.5	157.3	163.4	165.0	165.7	170.4	170.0	
Essential oils and perfumes	55	137.3	135.4	135.3	139.2	138.1	141.4	143.0	143.4	143.2	
Manufactured fertilizers	56	136.8	143.5	143.0	142.4	138.6	135.6	139.7	137.1	134.4	
Artificial resins and plastics and cellulose	58	133.4	136.0	135.9	135.3	134.0	134.7	137.2	136.9	136.3	
Chemical materials and products, n.e.s.	59	139.4	138.6	136.1	136.5	139.3	145.3	150.1	156.1	153.1	
Intermediate manufactured products	6	136.4	137.0	134.7	133.5	133.8	134.4	134.9	135.9	133.5	
Leather and furskins	61	146.6	146.3	142.5	139.6	140.8	140.9	-	-	-	
Rubber manufactures, n.e.s.	62	117.1	116.7	116.5	116.1	117.3	118.3	118.2	119.8	119.2	
Cork and wood manufactures	63	142.6	140.6	141.8	143.5	144.2	150.4	155.4	159.0	154.5	
Paper and paperboard products	64	122.5	125.1	122.0	119.8	119.2	115.5	113.7	114.5	114.4	
Textiles	65	130.5	132.7	131.3	133.3	135.4	136.2	135.1	138.9	136.7	
Nonmetallic mineral manufactures, n.e.s.	66	162.3	165.2	165.5	165.7	167.2	167.0	169.0	170.6	169.8	
Iron and steel	67	126.2	125.8	125.4	124.2	124.6	123.8	123.3	121.6	121.7	
Nonferrous metals	68	142.3	139.7	129.3	124.2	120.5	125.4	128.7	128.8	118.9	
Metal manufactures	69	137.7	138.8	137.7	136.9	138.9	140.0	140.2	142.8	140.5	
Machinery and transport equipment	7	134.5	136.0	133.9	134.0	136.0	136.4	136.4	138.0	136.9	
Machinery (including SITC 71-77)	7hyb	133.0	133.6	130.6	130.1	132.1	132.4	132.5	134.7	132.6	
Machinery specialized for particular industries	72	171.7	174.4	166.0	165.6	170.3	171.9	172.0	180.7	174.0	
Metalworking machinery	73	156.9	158.1	152.5	152.6	156.9	157.3	157.6	161.5	159.4	
General industrial machinery and parts, n.e.s.	74	163.5	165.0	159.0	159.2	163.7	164.1	164.2	169.1	166.0	
Office machines and automatic data processing equipment	75	116.1	115.0	112.7	111.4	111.7	112.0	110.8	111.2	110.3	
Telecommunications, sound recording and reproducing apparatus	76	110.6	109.4	108.7	108.0	108.5	108.1	108.0	108.1	108.5	
Electrical machinery and equipment	77	130.8	132.6	130.2	129.5	131.5	131.2	132.2	133.5	131.4	
Road vehicles and parts	78	134.9	137.5	136.3	137.1	139.0	139.3	139.0	139.9	140.2	
Miscellaneous manufactured articles	8	135.9	136.1	134.2	134.5	136.6	138.1	138.4	140.8	139.1	
Plumbing, heating, and lighting fixtures	81	145.8	140.7	140.2	140.1	141.9	143.4	145.2	147.4	145.7	
Furniture and parts	82	142.6	142.8	140.3	139.9	140.9	141.7	142.6	144.8	141.4	
Travel goods, handbags, and similar goods (6/85=100)	83	121.0	117.7	114.0	111.1	112.2	112.1	111.9	111.5	109.2	
Clothing	84	121.6	121.5	120.7	121.3	122.0	123.2	124.3	124.0	123.9	
Footwear	85	142.6	142.8	140.3	139.9	140.9	141.7	142.6	144.8	141.4	
Professional, scientific, and controlling instruments and apparatus	87	158.2	160.1	152.5	151.9	156.2	156.2	155.9	165.3	160.7	
Photographic apparatus and supplies, optical goods, watches, and clocks	88	138.6	139.0	134.7	135.1	138.4	139.3	138.4	143.3	141.1	
Miscellaneous manufactured articles, n.e.s.	89	143.5	143.5	142.8	143.1	146.8	149.5	148.5	151.5	150.0	

- Data not available.

40. U.S. export price indexes by end-use category

(1985 = 100 unless otherwise indicated)

Category	1990	1991				1992			
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Foods, feeds, and beverages	101.4	104.3	105.7	104.7	105.9	109.7	107.6	104.1	103.7
Industrial supplies and materials	123.5	119.9	116.6	114.3	113.6	112.6	114.0	115.5	114.3
Capital goods	111.8	113.7	114.6	115.1	115.3	115.9	116.3	116.4	116.3
Automotive	113.4	114.3	114.9	115.1	116.0	116.5	116.9	117.2	117.8
Consumer goods	121.4	122.9	123.5	124.3	125.1	126.1	126.9	127.5	128.3
Consumer nondurables, manufactured, except rugs	116.1	117.5	118.1	118.5	118.8	119.3	119.6	120.5	121.5
Consumer durables, manufactured	121.7	123.4	124.1	125.2	126.2	127.6	128.6	129.1	129.8
Agricultural (9/88=100)	104.4	106.5	107.9	105.8	106.2	108.5	107.6	105.6	105.7
All exports, excluding agricultural (9/88=100)	116.9	116.7	116.0	115.6	115.8	115.9	116.6	117.1	116.7

41. U.S. import price indexes by end-use category

(1985=100)

Category	1990	1991				1992			
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
All imports, excluding petroleum (6/88=100)	132.0	132.9	131.1	130.7	132.3	133.1	132.7	134.3	133.1
Foods, feeds, and beverages	116.3	117.4	117.6	116.9	119.0	121.4	115.2	115.4	114.6
Industrial supplies and materials	118.7	103.8	100.7	100.3	99.9	96.9	101.6	102.2	99.2
Petroleum and petroleum products, excluding natural gas	110.9	77.2	73.2	75.0	74.3	66.7	76.5	76.9	71.6
Industrial supplies and materials, excluding petroleum	125.3	125.6	123.2	120.9	120.8	121.6	122.0	122.8	121.5
Capital goods, except automotive	139.3	140.3	136.8	136.5	139.0	139.4	139.4	142.3	140.2
Automotive vehicles, parts and engines	133.3	135.7	134.4	135.0	136.9	137.1	136.8	138.1	137.4
Consumer goods except automotive	135.5	135.6	134.5	134.9	136.7	138.1	138.5	140.3	139.5
Nondurables, manufactured	135.2	135.2	134.1	134.9	136.4	137.9	138.9	141.3	139.8
Durables, manufactured	132.9	132.5	131.4	131.4	133.6	134.9	135.0	136.0	135.5

42. U.S. export price indexes by Standard Industrial Classification ¹

(1985=100)

Industry group	1990	1991				1992			
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Manufacturing:									
Food and kindred products	115.3	113.9	112.1	110.3	113.5	114.5	114.2	115.6	115.7
Lumber and wood products, except furniture	162.5	165.5	167.4	169.1	168.7	179.1	186.4	201.5	209.9
Furniture and fixtures	122.1	124.1	124.4	124.4	124.8	126.4	126.5	126.3	126.6
Paper and allied products	128.9	126.5	123.9	119.4	118.9	119.8	121.5	122.7	118.2
Chemicals and allied products	125.5	124.6	120.1	118.2	117.2	117.3	117.4	117.1	115.2
Petroleum and coal products	118.5	88.3	81.3	81.8	83.8	70.9	77.8	81.3	78.4
Primary metal products	119.7	115.5	111.6	110.6	109.9	109.6	109.6	110.0	108.2
Machinery, except electrical	107.5	108.9	109.2	109.1	108.9	109.5	109.6	109.7	109.4
Electrical machinery	109.0	110.0	111.0	112.5	113.2	113.8	113.4	113.9	113.5
Transportation equipment	118.5	121.9	123.3	123.7	124.6	124.5	125.5	126.2	126.8
Scientific instruments; optical goods; clocks	126.5	127.6	129.0	129.2	130.4	131.9	132.3	132.7	133.3

¹ SIC-based classification.

43. U.S. import price indexes by Standard Industrial Classification ¹

(1985 = 100)

Industry group	1990		1991				1992			
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	
Manufacturing:										
Food and kindred products	122.6	123.8	124.4	123.5	128.0	128.0	126.4	126.5	122.9	
Textile mill products	146.8	148.4	146.4	148.9	150.2	152.1	150.7	154.6	151.3	
Apparel and related products	122.2	122.1	121.4	122.1	122.8	124.2	125.1	127.5	128.3	
Lumber and wood products, except furniture	120.0	120.9	128.7	125.0	127.0	136.4	138.9	140.4	141.5	
Furniture and fixtures	136.6	137.2	135.5	135.9	136.7	137.7	138.1	141.0	138.1	
Paper and allied products	125.8	126.1	121.6	117.4	116.2	113.9	113.5	115.3	113.7	
Chemicals and allied products	124.6	126.7	124.5	123.8	124.4	124.9	124.9	125.5	125.4	
Petroleum refining and allied products	203.5	148.9	137.9	138.8	143.2	125.9	138.3	142.0	133.8	
Rubber and miscellaneous plastics products	127.4	128.9	127.7	127.8	129.7	131.0	131.7	134.2	133.1	
Leather and leather products	135.6	135.9	133.9	133.7	134.4	135.1	136.3	138.3	135.8	
Stone, clay, glass, and concrete products	157.8	159.3	158.7	158.5	160.4	161.4	163.6	165.3	166.1	
Primary metal products	126.5	124.7	120.5	117.5	116.5	117.6	117.8	117.3	114.0	
Fabricated metal products	147.4	148.6	147.0	146.5	148.7	149.4	149.8	152.3	150.1	
Machinery, except electrical	149.7	150.5	145.9	145.6	148.5	149.2	148.7	152.9	149.7	
Electrical machinery and supplies	118.6	119.0	117.2	116.5	117.7	117.4	117.8	118.8	117.7	
Transportation equipment	137.7	140.3	139.1	139.9	142.5	143.0	142.8	144.0	144.7	
Scientific instruments; optical goods; clocks	146.5	147.4	141.3	141.3	144.9	146.4	145.9	152.5	149.9	
Miscellaneous manufactured commodities	147.6	147.4	147.7	147.9	151.4	154.2	153.3	154.0	152.4	

¹ SIC - based classification.

44. Indexes of productivity, hourly compensation, and unit costs, quarterly data seasonally adjusted

(1982 = 100)

Item	Quarterly Indexes											
	1990			1991				1992				
	II	III	IV	I	II	III	IV	I	II	III	IV	
Business:												
Output per hour of all persons	110.2	109.8	109.7	109.3	109.8	110.3	111.2	112.3	112.6	113.5	114.8	
Compensation per hour	138.9	141.0	142.9	144.1	146.1	147.5	148.8	150.3	151.0	152.7	154.3	
Real compensation per hour	103.5	103.4	103.1	103.0	103.9	104.2	104.3	104.4	104.1	104.6	104.9	
Unit labor costs	126.0	128.4	130.3	131.8	133.1	133.7	133.8	133.8	134.1	134.5	134.4	
Unit nonlabor payments	140.0	139.1	139.5	141.2	141.8	142.8	144.3	147.0	148.9	147.9	152.4	
Implicit price deflator	130.6	131.9	133.3	134.9	136.0	136.7	137.3	138.2	139.0	138.9	140.3	
Nonfarm business:												
Output per hour of all persons	108.6	108.1	108.1	107.9	108.4	108.9	109.6	110.6	111.1	111.8	113.1	
Compensation per hour	137.5	139.6	141.6	143.0	145.0	146.4	147.5	148.9	149.8	151.4	153.0	
Real compensation per hour	102.5	102.4	102.2	102.2	103.1	103.4	103.4	103.5	103.3	103.7	104.0	
Unit labor costs	126.6	129.1	131.0	132.5	133.8	134.4	134.6	134.6	134.9	135.3	135.2	
Unit nonlabor payments	140.4	139.6	140.6	142.5	142.6	144.0	145.9	148.4	150.6	149.4	153.8	
Implicit price deflator	131.1	132.5	134.1	135.7	136.6	137.5	138.3	139.1	139.9	139.9	141.2	
Nonfinancial corporations:												
Output per hour of all employees	112.3	111.9	112.6	113.0	113.6	114.2	115.3	116.0	116.7	118.2	-	
Compensation per hour	135.6	137.6	139.6	140.8	142.7	144.0	145.2	145.9	146.6	147.9	-	
Real compensation per hour	101.1	100.9	100.7	100.7	101.5	101.7	101.7	101.4	101.1	101.3	-	
Total unit costs	119.1	121.4	122.7	123.9	124.7	125.3	125.0	124.6	124.4	124.5	-	
Unit labor costs	120.8	123.0	124.0	124.6	125.7	126.2	125.9	125.7	125.6	125.2	-	
Unit nonlabor costs	114.9	117.4	119.5	122.2	122.1	123.1	122.8	121.7	121.4	122.8	-	
Unit profits	176.7	157.2	149.7	151.3	154.5	150.7	155.2	167.7	179.6	179.3	-	
Unit nonlabor payments	126.5	124.9	125.2	127.7	128.2	128.3	128.9	130.3	132.4	133.5	-	
Implicit price deflator	122.7	123.6	124.4	125.6	126.5	126.9	126.9	127.3	127.8	127.9	-	
Manufacturing:												
Output per hour of all persons	124.8	127.2	127.0	126.1	127.5	129.4	129.7	129.4	131.0	132.7	134.1	
Compensation per hour	133.0	134.6	136.8	138.5	140.2	141.3	142.8	142.0	143.1	144.6	146.5	
Real compensation per hour	99.2	98.7	98.7	99.0	99.7	99.8	100.1	98.7	98.7	99.0	99.6	
Unit labor costs	106.6	105.8	107.7	109.9	110.0	109.2	110.1	109.8	109.2	108.9	109.2	

- Data not available.

Current Labor Statistics: Productivity Data

45. Annual indexes of multifactor productivity and related measures, selected years

(1982=100)

Item	1960	1970	1973	1980	1984	1985	1986	1987	1988	1989	1990
Private business:											
Productivity:											
Output per hour of all persons	65.1	87.0	94.8	99.2	105.1	107.3	109.8	111.1	113.6	113.2	112.8
Output per unit of capital services	128.5	122.2	125.1	109.3	106.8	107.2	106.5	108.0	110.9	110.5	108.4
Multifactor productivity	80.2	96.2	103.0	102.1	105.6	107.3	108.8	110.1	112.8	112.4	111.4
Output	52.1	75.8	88.0	101.0	113.2	118.0	121.6	126.7	133.5	136.3	136.6
Inputs:											
Hours of all persons	80.0	87.2	92.8	101.9	107.7	109.9	110.7	114.1	117.5	120.4	121.0
Capital services	40.5	62.1	70.4	92.5	106.0	110.1	114.2	117.4	120.4	123.3	126.0
Combined units of labor and capital input	65.0	78.8	85.5	99.0	107.1	110.0	111.8	115.1	118.4	121.3	122.6
Capital per hour of all persons	50.6	71.2	75.8	90.7	98.5	100.1	103.1	102.9	102.4	102.5	104.1
Private nonfarm business:											
Productivity:											
Output per hour of all persons	69.8	89.1	96.6	99.9	105.2	106.7	108.9	110.0	112.7	112.1	111.5
Output per unit of capital services	135.1	126.6	128.9	110.5	107.0	106.5	105.7	107.0	110.0	109.3	107.0
Multifactor productivity	84.8	98.5	104.9	102.8	105.7	106.6	107.9	109.1	111.9	111.3	110.1
Output	51.9	76.2	88.6	101.7	113.8	118.3	121.8	127.0	134.3	137.0	137.2
Inputs:											
Hours of all persons	74.4	85.5	91.7	101.8	108.2	110.9	111.8	115.5	119.1	122.2	123.1
Capital services	38.4	60.2	68.7	92.0	106.4	111.0	115.2	118.7	122.0	125.4	128.3
Combined units of labor and capital input	61.2	77.4	84.5	98.9	107.6	110.9	112.8	116.4	120.0	123.1	124.6
Capital per hour of all persons	51.6	70.4	75.0	90.4	98.4	100.1	103.0	102.7	102.4	102.6	104.2
Manufacturing:											
Productivity:											
Output per hour of all persons	58.4	77.2	89.4	96.6	110.0	114.8	120.0	126.4	132.1	133.3	136.6
Output per unit of capital services	136.6	128.0	143.4	113.4	115.7	117.2	118.9	124.9	132.9	132.8	131.3
Multifactor productivity	72.6	87.5	100.5	100.5	111.4	115.4	119.7	126.0	132.4	133.2	135.1
Output	55.0	82.3	100.9	106.2	118.6	122.8	126.6	134.3	144.6	146.4	147.0
Inputs:											
Hours of all persons	94.2	106.5	112.9	109.9	107.8	107.0	105.4	106.2	109.4	109.8	107.6
Capital services	40.3	64.3	70.4	93.6	102.5	104.8	106.5	107.5	108.8	110.3	112.0
Combined units of labor and capital inputs	75.8	94.1	100.5	105.7	106.4	106.4	105.7	106.6	109.2	109.9	108.8
Capital per hour of all persons	42.8	60.3	62.3	85.2	95.1	98.0	101.0	101.2	99.4	100.4	104.1

NOTE: Productivity and output in this table have not been revised for consistency with the December 1991 comprehensive revisions to the National Income and Product Accounts.

46. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years

(1982=100)

Item	1960	1970	1973	1981	1983	1985	1986	1987	1988	1989	1990	1991	1992
Business:													
Output per hour of all persons	65.5	86.9	95.0	99.9	102.2	106.1	108.3	109.4	110.4	109.5	109.7	110.1	113.3
Compensation per hour	21.1	36.7	45.1	93.0	103.7	113.0	118.6	122.7	128.0	132.3	139.7	146.6	152.1
Real compensation per hour	68.7	91.2	98.0	98.7	100.5	101.3	104.4	104.3	104.4	103.0	103.2	103.9	104.6
Unit labor costs	32.2	42.2	47.5	93.1	101.5	106.5	109.5	112.2	116.0	120.9	127.3	133.1	134.2
Unit nonlabor payments	33.6	42.7	52.1	97.5	107.5	120.9	122.1	125.6	130.7	136.8	139.3	142.5	149.1
Implicit price deflator	32.6	42.4	49.0	94.5	103.4	111.2	113.6	116.6	120.8	126.1	131.2	136.2	139.1
Nonfarm business:													
Output per hour of all persons	69.8	88.5	96.3	99.9	102.4	105.4	107.5	108.3	109.2	108.2	108.2	108.7	111.7
Compensation per hour	22.2	37.0	45.4	93.0	103.9	112.6	118.1	122.1	127.2	131.3	138.4	145.4	150.8
Real compensation per hour	72.3	92.0	98.6	98.8	100.7	101.0	104.0	103.7	103.7	102.2	102.2	103.0	103.7
Unit labor costs	31.8	41.8	47.1	93.1	101.5	106.8	109.9	112.8	116.4	121.4	127.9	133.8	135.0
Unit nonlabor payments	33.3	43.0	49.7	96.6	109.2	121.6	123.3	126.6	131.9	137.3	139.9	143.7	150.6
Implicit price deflator	32.3	42.2	47.9	94.2	104.0	111.6	114.2	117.2	121.4	126.5	131.8	137.0	140.0
Nonfinancial corporations:													
Output per hour of all employees	75.2	90.2	94.9	98.7	103.7	106.3	109.0	110.8	112.9	110.9	111.9	113.9	-
Compensation per hour	23.6	38.3	46.5	93.5	103.2	111.8	116.9	120.5	125.4	129.6	136.4	143.1	-
Real compensation per hour	76.9	95.4	101.1	99.2	100.0	100.2	102.9	102.4	102.3	100.8	100.7	101.4	-
Total unit costs	29.5	40.5	46.5	93.7	99.5	103.7	105.9	107.0	109.8	115.7	120.4	124.7	-
Unit labor costs	31.4	42.5	49.0	94.7	99.6	105.2	107.2	108.8	111.1	116.8	121.9	125.6	-
Unit nonlabor costs	24.8	35.5	40.2	91.3	99.3	100.1	102.4	102.5	106.4	112.9	116.7	122.6	-
Unit profits	75.1	69.5	87.9	120.8	135.9	168.1	150.0	172.1	183.5	168.5	162.7	152.9	-
Unit nonlabor payments	34.2	41.9	49.2	96.8	106.2	112.9	111.4	115.6	120.9	123.3	125.4	128.3	-
Implicit price deflator	32.3	42.3	49.1	95.4	101.8	107.7	108.6	111.0	114.3	119.0	123.0	126.5	-
Manufacturing:													
Output per hour of all persons	-	-	-	96.4	102.9	108.0	112.6	117.2	122.0	122.5	125.7	128.1	131.9
Compensation per hour	-	-	-	91.4	102.5	111.0	115.4	118.0	122.6	127.3	133.8	140.6	144.1
Real compensation per hour	-	-	-	97.0	99.3	99.5	101.7	100.2	100.0	99.1	98.8	99.6	99.1
Unit labor costs	-	-	-	94.8	99.6	102.8	102.5	100.6	100.5	103.9	106.4	109.8	109.3
Unit nonlabor payments	-	-	-	94.5	115.1	122.8	133.3	139.0	147.1	151.9	-	-	-
Implicit price deflator	-	-	-	94.8	103.4	107.7	110.1	110.1	112.0	115.7	-	-	-

- Data not available.

47. Annual indexes of output per hour for selected industries

(1982 = 100)

Industry	SIC	1973	1979	1983	1984	1985	1986	1987	1988	1989	1990	1991
Iron mining, usable ore	1011	125.0	125.2	140.0	172.4	187.2	195.1	245.5	254.5	244.1	221.1	-
Copper mining, recoverable metal	1021	73.9	84.6	112.0	132.5	163.0	191.5	174.3	191.2	187.9	182.2	175.4
Coal mining	12	105.3	83.1	114.3	127.0	129.3	140.3	151.8	168.4	177.5	180.4	186.3
Crude petroleum and natural gas	1311	223.1	141.7	99.2	105.1	106.9	116.6	128.0	129.0	125.1	124.0	125.6
Nonmetallic minerals, except fuels	14	108.9	114.9	110.0	117.7	119.9	120.6	127.6	130.4	130.1	137.9	132.3
Meatpacking plants	2011	74.2	87.4	104.2	107.2	112.1	109.7	110.7	111.3	101.2	100.8	102.6
Sausages and other prepared meats	2013	71.5	98.5	103.1	102.6	101.6	101.5	105.5	111.3	104.3	98.2	-
Poultry dressing and processing	2015	61.6	84.5	104.8	104.1	106.2	101.6	108.2	103.1	108.3	114.8	-
Fluid milk	2026	65.3	85.4	105.3	109.4	112.8	117.8	122.4	127.3	130.6	131.9	135.3
Canned fruits and vegetables	2033	86.8	93.9	105.3	107.5	114.2	123.2	125.4	122.8	114.2	117.5	-
Frozen fruits and vegetables	2037	82.0	88.5	101.3	102.1	98.1	103.9	101.9	99.7	99.8	96.3	-
Flour and other grain mill products	2041	77.4	93.6	105.2	108.5	114.8	116.9	122.6	126.5	126.0	133.1	-
Cereal breakfast foods	2043	84.0	93.2	104.3	114.7	119.6	121.1	122.4	120.7	117.4	124.7	-
Rice milling	2044	78.1	92.4	98.2	88.5	97.1	105.5	125.9	105.4	124.2	134.5	-
Wet corn milling	2046	41.1	76.1	113.1	138.3	143.9	158.1	170.3	162.4	168.1	170.5	-
Prepared feeds for animals and fowls	2047,48	65.7	81.1	101.8	106.0	115.0	112.0	120.2	122.2	120.7	124.5	-
Bakery products	2051,52	90.6	92.1	104.0	104.4	106.4	112.6	111.4	103.3	103.0	106.6	104.8
Raw and refined cane sugar	2061,62	106.7	116.0	112.3	104.7	118.1	117.2	123.0	121.4	117.9	118.0	123.2
Beet sugar	2063	105.4	110.3	99.0	113.3	104.1	114.7	141.9	135.2	124.6	129.2	133.8
Malt beverages	2082	60.2	89.6	108.5	115.3	110.4	130.7	143.8	143.2	142.8	153.0	152.1
Bottled and canned soft drinks	2086	69.3	90.6	106.6	114.7	119.7	128.6	140.5	154.2	167.5	177.8	186.8
Fresh or frozen fish and seafood	2092	93.5	96.3	90.0	89.7	88.1	91.4	98.4	98.6	89.8	86.2	-
Cigarettes, chewing and smoking tobacco	2111,31	89.2	103.0	103.4	104.8	107.8	110.5	116.1	123.9	124.7	131.0	131.5
Cigars	2121	80.3	91.0	101.7	129.0	119.3	123.8	130.5	136.5	141.6	138.7	130.0
Cotton and synthetic broadwoven fabrics	2211,21	68.1	89.6	108.6	107.1	111.1	119.5	118.2	115.9	120.5	125.5	129.6
Hosiery	2251,52	65.2	94.3	103.0	103.9	102.4	103.9	101.2	108.6	109.5	108.8	113.1
Yarn spinning mills	2281	72.0	87.8	108.8	110.3	114.8	120.6	131.3	129.3	135.8	140.5	148.8
Men's and boys' suits and coats	2311	88.4	101.7	94.8	101.7	111.6	112.8	112.5	115.8	117.9	115.4	-
Sawmills and planing mills, general	2421	85.7	90.8	107.4	111.1	115.8	128.0	125.4	128.3	125.7	125.7	128.3
Millwork	2431	118.9	107.2	102.1	103.0	99.6	104.7	112.2	110.6	109.5	110.1	116.3
Wood kitchen cabinets	2434	86.7	95.8	97.9	97.7	92.3	89.8	108.1	106.3	98.8	102.1	-
Hardwood veneer and plywood	2435	79.2	96.3	108.5	102.5	106.7	106.6	130.6	132.7	132.4	124.3	-
Softwood veneer and plywood	2436	75.7	76.4	104.2	106.3	105.6	108.2	120.9	121.0	123.8	131.0	136.1
Wood containers	244	-	74.2	99.9	102.5	99.2	98.0	98.2	101.7	107.4	110.9	-
Wood household furniture	2511,17	105.9	103.6	105.8	107.7	106.9	114.6	114.8	116.0	114.2	112.7	116.8
Upholstered household furniture	2512	78.8	90.7	104.8	98.9	107.7	109.8	109.1	108.9	110.3	107.6	112.2
Metal household furniture	2514	87.7	83.8	101.1	112.2	114.7	118.7	115.4	116.0	115.1	119.7	124.8
Mattresses and bedsprings	2515	84.7	98.4	101.1	99.4	95.9	100.9	112.5	117.5	125.8	129.0	128.2
Wood office furniture	2521	86.6	122.8	104.1	106.4	106.8	103.6	107.8	102.1	101.5	103.3	-
Office furniture, except wood	2522	84.0	89.7	104.9	112.5	110.6	114.4	112.7	107.9	111.4	107.7	-
Pulp, paper, and paperboard mills	2611,21,31	82.2	94.7	107.4	108.7	110.6	120.1	124.0	126.2	127.0	127.9	128.3
Corrugated and solid fiber boxes	2653	77.0	95.5	101.9	106.3	109.5	113.0	110.2	109.6	107.6	110.4	111.0
Folding paperboard boxes	2657	89.0	100.2	101.3	100.5	98.4	101.3	105.2	105.3	107.0	110.7	110.0
Paper and plastic bags	2673,74	98.7	102.8	108.7	112.4	114.4	120.6	119.4	116.6	112.3	110.4	-
Alkalies and chlorine	2812	101.2	107.1	128.7	149.7	154.0	208.2	204.9	208.2	191.5	186.0	-
Inorganic pigments	2816	118.5	108.6	110.8	131.2	135.3	141.0	155.4	158.1	165.1	157.3	-
Industrial inorganic chemicals, not elsewhere classified	2819 pt.	122.0	141.8	108.9	123.8	122.2	124.2	139.8	129.7	120.0	122.3	-
Synthetic fibers	2823,24	76.6	110.7	121.2	120.9	130.8	140.7	151.7	158.7	155.2	150.2	155.5
Soaps and detergents	2841	100.0	103.8	97.4	102.3	104.3	106.2	114.4	117.5	125.8	148.5	-
Cosmetics and other toiletries	2844	104.1	112.1	103.1	102.3	105.0	113.8	118.0	122.9	119.4	118.1	-
Paints and allied products	2851	77.3	98.5	106.5	113.6	117.3	118.8	119.6	123.2	127.3	132.9	133.7
Industrial organic chemicals, not elsewhere classified	2869	103.6	130.2	120.6	130.6	129.1	136.5	150.6	162.5	158.9	147.6	141.4
Nitrogenous fertilizers	2873	80.7	96.5	112.0	133.6	131.4	117.3	138.0	140.4	140.8	148.8	-
Phosphatic fertilizers	2874	100.8	107.3	121.9	136.8	127.0	116.3	144.8	133.5	123.7	149.9	-
Fertilizers, mixing only	2875	105.5	134.2	115.1	124.2	128.4	119.7	127.7	131.2	141.4	139.0	-
Agricultural chemicals, not elsewhere classified	2879	86.7	104.2	101.9	115.6	108.7	109.4	119.2	129.6	128.7	125.3	-
Petroleum refining	2911	117.9	119.5	102.7	116.3	128.8	142.6	143.4	151.9	157.8	157.5	155.4
Tires and inner tubes	3011	74.2	83.6	107.6	117.6	118.9	124.3	134.9	140.7	143.4	146.1	147.4
Rubber and plastics hose and belting	3052	93.9	96.2	111.1	119.2	114.7	116.4	113.1	121.2	109.2	115.1	-
Miscellaneous plastic products, not elsewhere classified	308	85.0	86.0	97.4	100.4	102.7	103.7	117.1	114.9	113.6	117.2	117.1
Footwear	314	92.6	94.2	97.7	99.3	101.0	102.8	100.6	102.8	101.4	92.9	90.8
Glass containers	3221	87.5	96.8	99.3	113.0	108.4	114.3	116.1	117.5	121.8	130.5	131.3
Cement, hydraulic	3241	106.0	102.0	115.2	133.1	136.2	143.8	148.1	152.7	163.0	166.2	149.9
Clay construction products	3251,53,59	87.6	88.5	97.8	106.9	109.1	110.7	116.0	121.2	112.3	116.5	103.4
Clay refractories	3255	93.6	110.2	121.5	115.3	114.1	123.3	124.2	125.8	120.8	123.0	130.8
Concrete products	3271,72	101.6	101.7	107.2	109.3	110.8	116.8	113.8	117.8	123.2	121.9	131.1
Ready-mixed concrete	3273	114.3	110.4	103.7	106.4	107.7	110.8	115.5	115.8	116.7	115.1	118.7
Steel	331	117.3	117.6	128.7	144.3	153.3	156.3	167.6	184.8	179.5	184.8	177.5
Gray and ductile iron foundries	3321	100.8	103.3	104.5	113.1	110.1	113.2	114.7	123.5	118.6	119.0	110.8
Steel foundries	3324,25	114.5	113.1	100.9	111.1	107.4	112.8	108.0	103.5	104.1	103.4	95.2
Primary copper	3331	70.5	88.2	106.4	123.7	158.2	190.3	214.7	222.8	207.8	185.2	189.9
Primary aluminum	3334	96.6	96.8	108.5	121.8	121.8	130.3	129.6	132.6	135.8	138.1	143.6
Copper rolling and drawing	3351	87.9	92.6	114.5	121.1	115.9	124.3	128.0	128.6	121.3	120.7	120.0
Aluminum rolling and drawing	3353,54,55	94.7	101.1	110.9	116.6	116.4	125.0	125.7	124.6	121.7	118.7	-
Metal cans	3411	68.9	87.5	101.9	103.1	105.1	104.8	107.7	115.4	117.0	127.8	135.5

See footnotes at end of table.

Current Labor Statistics: Productivity Data

47. Continued—Annual indexes of output per hour for selected industries

(1982 = 100)

Industry	SIC	1973	1979	1983	1984	1985	1986	1987	1988	1989	1990	1991
Hand and edge tools, not elsewhere classified	3423	109.6	112.1	96.4	97.8	98.9	98.7	103.9	105.4	106.0	100.1	-
Heating equipment, except electric	3433	83.1	93.6	90.9	99.5	98.9	102.0	106.4	119.1	109.0	117.0	-
Fabricated structural metal	3441	113.4	102.5	103.4	108.3	118.3	118.3	118.8	118.1	112.3	116.3	-
Metal doors, sash, and trim	3442	95.8	96.6	103.8	107.0	110.6	108.3	107.9	110.4	110.2	106.2	-
Bolts, nuts, rivets, and washers	3452	97.2	103.6	112.8	113.1	118.1	122.3	133.5	129.1	124.0	124.0	-
Automotive stampings	3465	88.7	96.4	114.6	119.7	112.6	114.0	119.1	124.4	124.8	120.0	-
Metal stampings, not elsewhere classified	3469	111.7	113.7	99.7	106.1	100.1	106.4	117.1	116.9	114.6	111.5	-
Valves and pipe fittings	3491,92,94	102.0	104.0	102.4	103.9	103.5	103.2	109.8	111.8	111.3	112.1	-
Fabricated pipe and fittings	3498	123.1	100.7	97.2	109.4	100.7	101.4	83.2	82.7	84.6	88.7	-
Internal combustion engines, not elsewhere classified	3519	111.3	120.0	106.1	122.1	125.9	133.4	134.9	141.9	149.9	143.6	133.7
Farm machinery and equipment	3523	103.3	106.1	99.4	113.0	106.7	103.5	108.1	119.2	130.5	136.6	146.9
Lawn and garden equipment	3524	84.1	106.3	103.5	101.7	104.4	117.9	127.2	124.1	119.4	121.4	-
Construction machinery	3531	105.6	112.7	99.5	116.9	119.1	126.3	123.1	132.3	136.3	140.3	-
Mining machinery	3532	119.4	105.0	100.4	108.7	112.1	115.1	120.4	122.8	130.2	121.2	129.3
Oil and gas field machinery	3533	118.7	113.3	93.1	106.9	103.8	107.0	113.0	112.2	118.3	121.4	-
Metal-cutting machine tools	3541	118.3	115.5	91.7	106.2	110.5	112.7	126.7	119.3	127.0	129.3	134.2
Metal-forming machine tools	3542	134.2	116.7	103.4	110.9	114.5	115.2	124.1	143.9	139.5	127.3	111.7
Machine tool accessories	3545	118.7	113.3	93.1	106.9	103.8	107.0	113.0	112.2	118.3	121.4	-
Pumps and pumping equipment	3561,94	101.2	108.8	106.1	114.3	114.8	117.5	129.7	137.6	133.0	135.5	-
Ball and roller bearings	3562	123.7	127.1	103.6	113.4	110.2	114.5	122.2	124.5	118.1	110.9	112.5
Air and gas compressors	3563	104.7	103.9	103.4	107.9	110.5	114.1	120.5	125.8	127.8	131.3	-
Refrigeration and heating equipment	3585	102.8	101.1	100.9	105.5	103.8	101.6	105.5	109.0	111.8	111.7	-
Carburetors, pistons, rings, and valves	3592	131.0	102.9	108.3	119.9	124.0	120.8	129.3	142.1	154.9	146.9	-
Transformers, except electronic	3612	97.2	108.8	99.6	98.2	99.5	101.3	103.8	106.9	109.0	116.7	120.7
Switchgear and switchboard apparatus	3613	100.3	101.5	104.5	105.7	108.6	108.4	112.5	122.5	122.3	124.5	-
Motors and generators	3621	98.3	97.0	101.1	103.9	105.6	106.7	110.1	114.5	113.9	113.0	114.3
Household cooking equipment	3631	75.4	96.6	104.0	109.8	109.4	123.5	125.5	128.2	135.4	130.2	134.6
Household refrigerators and freezers	3632	82.3	96.7	109.4	109.2	116.9	113.7	112.4	115.3	120.3	120.9	128.6
Household laundry equipment	3633	83.9	102.6	106.8	112.4	113.2	118.4	122.0	130.0	122.8	126.6	125.6
Household appliances, not elsewhere classified	3639	90.1	108.4	110.8	118.8	120.6	125.2	138.9	140.0	136.9	126.7	137.2
Electric lamps	3641	83.2	97.1	114.5	120.8	115.9	119.3	131.0	138.4	149.2	156.1	175.3
Lighting fixtures and equipment	3645,46,47,48	102.9	103.8	105.8	112.5	118.2	126.0	122.7	119.0	117.4	115.4	112.8
Household audio and video equipment	3651	53.7	72.3	121.3	148.6	158.8	179.6	172.9	191.5	212.6	231.9	236.2
Motor vehicles and equipment	371	88.4	100.8	112.7	118.2	123.4	123.1	130.0	133.7	133.3	132.6	127.0
Instruments to measure electricity	3825	76.2	84.2	102.1	112.2	109.5	102.6	111.5	118.8	121.8	120.4	-
Photographic equipment and supplies	3861	83.5	111.4	110.9	114.0	110.7	119.1	122.5	130.9	139.1	134.1	-
Railroad transportation, revenue traffic	4011	83.1	90.4	122.4	131.9	139.7	153.8	178.3	195.3	207.4	218.1	236.2
Bus carriers, class 1	4111,13,14 pts.	107.4	99.5	96.4	92.0	88.3	87.9	91.9	99.2	96.2	-	-
Trucking, except local	4213	89.5	108.0	121.2	125.2	120.6	124.6	128.7	135.7	140.9	-	-
Air transportation	4512,13,22 pts.	74.5	98.5	110.4	114.8	118.8	119.9	126.9	122.5	118.3	143.7	115.3
Petroleum pipelines	4612,13	109.7	114.0	106.5	117.9	118.5	121.0	118.7	124.3	122.4	121.6	117.6
Telephone communications	481	57.7	85.9	112.4	110.8	116.1	125.0	128.7	135.5	141.9	142.4	150.4
Electric utilities	491,493 pt.	98.8	106.6	101.6	105.5	104.5	107.1	112.4	117.9	121.1	123.8	127.1
Gas utilities	492,493 pt.	117.3	116.2	91.2	94.0	92.4	83.3	80.9	85.3	83.7	76.6	75.6
Scrap and waste materials	5093	-	107.6	120.1	118.6	124.3	130.0	133.2	130.9	120.9	141.8	153.9
Hardware stores	5251	90.2	105.1	98.2	103.3	102.0	108.1	106.2	115.7	122.8	118.0	109.0
Department stores	5311	77.2	92.9	106.5	113.0	115.6	121.3	124.0	123.6	120.9	117.9	124.2
Variety stores	5331	106.7	90.6	105.0	107.1	97.6	80.5	75.6	74.1	87.1	102.0	100.7
Grocery stores	5411	103.0	101.1	100.6	101.9	99.9	98.2	94.7	93.3	90.6	89.5	89.6
Retail bakeries	546	121.9	108.9	100.6	92.4	84.5	90.7	97.0	99.8	101.1	105.6	120.0
New and used car dealers	5511	95.8	97.3	109.8	112.2	112.2	114.5	112.5	115.5	116.5	120.4	120.1
Auto and home supply stores	5531	84.2	96.3	109.6	107.8	112.2	111.7	117.8	123.1	123.0	126.4	127.2
Gasoline service stations	5541	77.0	95.9	109.3	112.9	121.4	132.2	129.6	130.7	130.8	125.2	124.7
Men's and boys' clothing stores	5611	88.7	93.1	102.4	107.1	112.3	115.1	114.4	115.4	113.3	110.8	110.4
Women's clothing stores	5621	66.3	81.8	105.6	109.5	111.5	119.7	111.4	109.2	111.6	114.1	115.9
Family clothing stores	5651	77.6	77.0	108.1	107.9	104.7	104.9	101.3	102.4	104.3	102.7	103.6
Shoe stores	5661	91.2	102.5	98.7	101.9	109.9	118.7	112.3	114.7	119.3	117.7	117.0
Furniture and home furnishings stores	571	98.6	107.5	107.2	117.4	113.9	122.0	120.5	119.5	121.7	124.4	118.4
Household appliance stores	5722	89.3	109.2	107.4	130.5	142.2	159.2	149.7	150.1	156.9	158.2	160.2
Radio, television, and computer stores	573	68.7	79.1	112.2	112.4	125.6	132.1	140.7	166.4	165.2	172.2	176.8
Eating and drinking places	581	106.7	102.6	99.0	95.3	92.6	95.6	96.1	98.3	97.0	97.6	101.0
Drug and proprietary stores	5912	90.0	96.2	104.0	102.2	98.9	98.5	97.5	99.4	100.2	101.7	106.5
Liquor stores	5921	93.3	89.3	94.7	92.5	100.7	92.8	87.3	85.5	87.6	90.9	91.1
Commercial banks	602	102.8	106.6	108.9	112.0	117.8	120.0	124.9	129.3	127.8	135.7	-
Laundry, cleaning, and garment services	721	108.8	107.8	99.6	102.0	98.0	95.4	94.7	93.6	95.8	96.6	-
Beauty shops	7231	93.4	94.9	109.8	104.3	101.8	102.7	106.0	102.6	109.3	108.7	-
Automotive repair shops	753	119.3	114.7	98.0	100.1	108.4	104.8	108.8	114.6	117.2	115.7	-

- Data not available.

48. Unemployment rates, approximating U.S. concepts, in nine countries, quarterly data seasonally adjusted

Country	Annual average		1991			1992			
	1991	1992	II	III	IV	I	II	III	IV
United States	6.7	7.4	6.7	6.7	7.0	7.3	7.5	7.5	7.3
Canada	10.3	-	10.3	10.4	10.3	10.7	11.3	11.5	11.4
Australia	9.6	-	9.5	9.9	10.4	10.5	10.7	10.9	11.3
Japan	2.1	-	2.1	2.2	2.1	2.1	2.1	2.2	2.3
France	9.6	-	9.5	9.7	9.9	10.0	10.2	10.2	10.4
Germany	4.4	-	4.4	4.4	4.4	4.4	4.6	4.8	5.0
Italy ¹	6.9	-	7.0	6.7	6.9	7.0	6.9	6.9	-
Sweden	2.6	-	2.5	2.8	3.2	3.7	5.1	5.0	5.2
United Kingdom	8.8	-	8.6	9.2	9.4	9.6	9.8	10.2	10.6

¹ Quarterly rates are for the first month of the quarter.
 - Data not available.
 NOTE: Quarterly figures for France, Germany, and the United Kingdom are calculated by applying annual adjust-

ment factors to current published data and therefore should be viewed as less precise indicators of unemployment under U.S. concepts than the annual figures.

49. Annual data: Employment status of the working-age population, approximating U.S. concepts, 10 countries

(Numbers in thousands)

Employment status and country	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Civilian labor force											
United States	108,670	110,204	111,550	113,544	115,461	117,834	119,865	121,669	123,869	124,787	125,303
Canada	11,899	11,926	12,109	12,316	12,532	12,746	13,011	13,275	13,503	13,681	13,757
Australia	6,810	6,910	6,997	7,135	7,300	7,588	7,758	7,974	8,237	8,459	8,534
Japan	56,320	56,980	58,110	58,480	58,820	59,410	60,050	60,860	61,920	63,050	64,280
France	22,950	23,160	23,140	23,300	23,360	23,440	23,550	23,600	23,740	23,860	24,080
Germany	27,540	27,710	27,670	27,800	28,020	28,240	28,390	28,610	28,840	29,440	29,820
Italy	21,320	21,410	21,590	21,670	21,800	22,290	22,350	22,660	22,530	22,660	22,940
Netherlands	6,090	6,150	6,120	6,200	6,250	6,370	6,500	6,530	6,610	6,780	6,870
Sweden	4,327	4,350	4,369	4,385	4,418	4,443	4,480	4,540	4,599	4,642	4,626
United Kingdom	26,590	26,560	26,590	27,010	27,210	27,380	27,720	28,150	28,420	28,540	28,400
Participation rate¹											
United States	63.9	64.0	64.0	64.4	64.8	65.3	65.6	65.9	66.5	66.4	66.0
Canada	64.8	64.1	64.4	64.8	65.3	65.7	66.2	66.7	67.0	67.0	66.3
Australia	61.9	61.7	61.4	61.5	61.6	62.8	63.0	63.3	64.2	64.7	64.3
Japan	62.6	62.7	63.1	62.7	62.3	62.1	61.9	61.9	62.2	62.6	63.2
France	57.1	57.1	56.6	56.6	56.3	56.1	55.9	55.5	55.3	55.2	55.3
Germany	54.7	54.6	54.3	54.4	54.7	54.9	55.0	55.1	55.2	55.1	55.5
Italy	48.3	47.7	47.5	47.3	47.2	47.8	47.6	47.4	47.3	47.3	47.7
Netherlands	56.7	56.6	55.7	55.7	55.5	55.9	56.3	56.1	56.3	56.8	57.6
Sweden	66.8	66.8	66.7	66.6	66.9	67.0	67.1	67.6	68.0	68.1	67.6
United Kingdom	62.2	61.9	61.6	62.1	62.2	62.2	62.6	63.4	63.8	63.9	63.6
Employed											
United States	100,397	99,526	100,834	105,005	107,150	109,597	112,440	114,968	117,342	117,914	116,877
Canada	11,001	10,618	10,675	10,932	11,221	11,531	11,861	12,245	12,486	12,572	12,340
Australia	6,416	6,415	6,300	6,494	6,697	6,974	7,129	7,398	7,728	7,872	7,713
Japan	55,060	55,620	56,550	56,870	57,260	57,740	58,320	59,310	60,500	61,710	62,920
France	21,200	21,240	21,170	20,980	20,920	20,950	21,020	21,190	21,460	21,680	21,780
Germany	26,450	26,150	25,770	25,830	25,010	26,380	26,590	26,800	27,200	27,970	28,500
Italy	20,280	20,250	20,320	20,390	20,490	20,610	20,590	20,870	20,770	21,070	21,360
Netherlands	5,550	5,520	5,420	5,490	5,650	5,740	5,850	5,920	6,050	6,270	6,390
Sweden	4,219	4,213	4,218	4,249	4,293	4,326	4,396	4,467	4,538	4,572	4,504
United Kingdom	23,800	23,560	23,450	23,830	24,150	24,300	24,860	25,730	26,390	26,580	25,910
Employment-population ratio²											
United States	59.0	57.8	57.9	59.5	60.1	60.7	61.5	62.3	63.0	62.7	61.6
Canada	59.9	57.1	56.8	57.5	58.5	59.4	60.4	61.6	62.0	61.5	59.5
Australia	58.4	57.3	55.3	56.0	56.5	57.7	57.9	58.7	60.2	60.2	58.1
Japan	61.2	61.2	61.4	61.0	60.6	60.4	60.1	60.4	60.8	61.3	61.8
France	52.8	52.3	51.8	51.0	50.4	50.2	49.9	49.8	50.0	50.2	50.0
Germany	52.5	51.6	50.6	50.5	50.7	51.3	51.5	51.6	52.0	52.3	53.0
Italy	45.9	45.2	44.7	44.5	44.4	44.2	43.8	43.7	43.6	44.0	44.4
Netherlands	51.7	50.8	49.3	49.3	50.1	50.3	50.7	50.8	51.5	52.6	53.5
Sweden	65.1	64.7	64.4	64.5	65.0	65.2	65.8	66.5	67.1	67.0	65.8
United Kingdom	55.7	54.9	54.3	54.8	55.2	55.2	56.2	57.9	59.2	59.5	58.0
Unemployed											
United States	8,273	10,678	10,717	8,539	8,312	8,237	7,425	6,701	6,528	6,874	8,426
Canada	898	1,308	1,434	1,384	1,311	1,215	1,150	1,031	1,018	1,109	1,417
Australia	394	495	697	641	603	613	629	576	509	587	821
Japan	1,260	1,360	1,560	1,610	1,560	1,670	1,730	1,550	1,420	1,340	1,360
France	1,750	1,920	1,970	2,320	2,440	2,490	2,530	2,410	2,280	2,180	2,300
Germany	1,090	1,560	1,900	1,970	2,010	1,860	1,800	1,810	1,640	1,470	1,320
Italy	1,040	1,160	1,270	1,280	1,310	1,680	1,760	1,790	1,760	1,590	1,580
Netherlands	540	630	700	710	600	630	650	610	560	510	480
Sweden	108	137	151	136	125	117	84	73	61	70	122
United Kingdom	2,790	3,000	3,140	3,180	3,060	3,080	2,860	2,420	2,030	1,960	2,490
Unemployment rate											
United States	7.6	9.7	9.6	7.5	7.2	7.0	6.2	5.5	5.3	5.5	6.7
Canada	7.5	11.0	11.8	11.2	10.5	9.5	8.8	7.8	7.5	8.1	10.3
Australia	5.8	7.2	10.0	9.0	8.3	8.1	8.1	7.2	6.2	6.9	9.6
Japan	2.2	2.4	2.7	2.8	2.6	2.8	2.9	2.5	2.3	2.1	2.1
France	7.6	8.3	8.5	10.0	10.4	10.6	10.7	10.2	9.6	9.1	9.6
Germany	4.0	5.6	6.9	7.1	7.2	6.6	6.3	6.3	5.7	5.0	4.4
Italy	4.9	5.4	5.9	5.9	6.0	7.5	7.9	7.9	7.8	7.0	6.9
Netherlands	8.9	10.2	11.4	11.4	9.6	9.9	10.0	9.3	8.5	7.5	7.0
Sweden	2.5	3.1	3.5	3.1	2.8	2.6	1.9	1.6	1.3	1.5	2.6
United Kingdom	10.5	11.3	11.8	11.8	11.2	11.2	10.3	8.6	7.1	6.9	8.8

¹ Labor force as a percent of the working-age population.

² Employment as a percent of the working-age population.

NOTE: See "Notes on the data" for information on breaks in series for Germany, Italy, the Netherlands, and Sweden.

51. Occupational injury and illness incidence rates by industry,¹ United States

Industry and type of case ²	Incidence rates per 100 full-time workers ³								
	1983	1984	1985	1986	1987	1988	1989 ¹	1990	1991
PRIVATE SECTOR⁴									
Total cases	7.6	8.0	7.9	7.9	8.3	8.6	8.6	8.8	8.4
Lost workday cases	3.4	3.7	3.6	3.6	3.8	4.0	4.0	4.1	3.9
Lost workdays	58.5	63.4	64.9	65.8	69.9	76.1	78.7	84.0	86.5
Agriculture, forestry, and fishing¹									
Total cases	11.9	12.0	11.4	11.2	11.2	10.9	10.9	11.6	10.8
Lost workday cases	6.1	6.1	5.7	5.6	5.7	5.6	5.7	5.9	5.4
Lost workdays	90.8	90.7	91.3	93.6	94.1	101.8	100.9	112.2	108.3
Mining									
Total cases	8.4	9.7	8.4	7.4	8.5	8.8	8.5	8.3	7.4
Lost workday cases	4.5	5.3	4.8	4.1	4.9	5.1	4.8	5.0	4.5
Lost workdays	125.1	160.2	145.3	125.9	144.0	152.1	137.2	119.5	129.6
Construction									
Total cases	14.8	15.5	15.2	15.2	14.7	14.6	14.3	14.2	13.0
Lost workday cases	6.3	6.9	6.8	6.9	6.8	6.8	6.8	6.7	6.1
Lost workdays	118.2	128.1	128.9	134.5	135.8	142.2	143.3	147.9	148.1
General building contractors:									
Total cases	14.4	15.4	15.2	14.9	14.2	14.0	13.9	13.4	12.0
Lost workday cases	6.2	6.9	6.8	6.6	6.5	6.4	6.5	6.4	5.5
Lost workdays	113.0	121.3	120.4	122.7	134.0	132.2	137.3	137.6	132.0
Heavy construction, except building:									
Total cases	15.4	14.9	14.5	14.7	14.5	15.1	13.8	13.8	12.8
Lost workday cases	6.2	6.4	6.3	6.3	6.4	7.0	6.5	6.3	6.0
Lost workdays	122.4	131.7	127.3	132.9	139.1	162.3	147.1	144.6	160.1
Special trade contractors:									
Total cases	14.8	15.8	15.4	15.6	15.0	14.7	14.6	14.7	13.5
Lost workday cases	6.4	7.1	7.0	7.2	7.1	7.0	6.9	6.9	6.3
Lost workdays	119.0	130.1	133.3	140.4	135.7	141.1	144.9	153.1	151.3
Manufacturing									
Total cases	10.0	10.6	10.4	10.6	11.9	13.1	13.1	13.2	12.7
Lost workday cases	4.3	4.7	4.6	4.7	5.3	5.7	5.8	5.8	5.6
Lost workdays	73.5	77.9	80.2	85.2	95.5	107.4	113.0	120.7	121.5
Durable goods:									
Total cases	10.3	11.1	10.9	11.0	12.5	14.2	14.1	14.2	13.6
Lost workday cases	4.3	4.8	4.7	4.8	5.4	5.9	6.0	6.0	5.7
Lost workdays	73.4	79.9	82.0	87.1	96.8	111.1	116.5	123.3	122.9
Lumber and wood products:									
Total cases	18.3	19.6	18.5	18.9	18.9	19.5	18.4	18.1	16.8
Lost workday cases	9.2	9.9	9.3	9.7	9.6	10.0	9.4	8.8	8.3
Lost workdays	163.5	172.0	171.4	177.2	176.5	189.1	177.5	172.5	172.0
Furniture and fixtures:									
Total cases	14.1	15.3	15.0	15.2	15.4	16.6	16.1	16.9	15.9
Lost workday cases	5.7	6.4	6.3	6.3	6.7	7.3	7.2	7.8	7.2
Lost workdays	83.0	101.5	100.4	103.0	103.6	115.7	124.9	139.2	131.2
Stone, clay, and glass products:									
Total cases	13.1	13.6	13.9	13.6	14.9	16.0	15.5	15.4	14.8
Lost workday cases	6.0	6.6	6.7	6.5	7.1	7.5	7.4	7.3	6.8
Lost workdays	112.0	120.8	127.8	126.0	135.8	141.0	149.8	160.5	156.0
Primary metal industries:									
Total cases	12.4	13.3	12.6	13.6	17.0	19.4	18.7	19.0	17.7
Lost workday cases	5.4	6.1	5.7	6.1	7.4	8.2	8.1	8.1	7.4
Lost workdays	103.4	115.3	113.8	125.5	145.8	161.3	168.3	180.2	169.1
Fabricated metal products:									
Total cases	15.1	16.1	16.3	16.0	17.0	18.8	18.5	18.7	17.4
Lost workday cases	6.1	6.7	6.9	6.8	7.2	8.0	7.9	7.9	7.1
Lost workdays	96.5	104.9	110.1	115.5	121.9	138.8	147.6	155.7	146.6
Industrial machinery and equipment:									
Total cases	9.8	10.7	10.8	10.7	11.3	12.1	12.1	12.0	11.2
Lost workday cases	3.6	4.1	4.2	4.2	4.4	4.7	4.8	4.7	4.4
Lost workdays	58.1	65.8	69.3	72.0	72.7	82.8	86.8	88.9	86.6
Electronic and other electrical equipment:									
Total cases	6.3	6.8	6.4	6.4	7.2	8.0	9.1	9.1	8.6
Lost workday cases	2.6	2.8	2.7	2.7	3.1	3.3	3.9	3.8	3.7
Lost workdays	41.4	45.0	45.7	49.8	55.9	64.6	77.5	79.4	83.0
Transportation equipment:									
Total cases	8.4	9.3	9.0	9.6	13.5	17.7	17.7	17.8	18.3
Lost workday cases	3.6	4.2	3.9	4.1	5.7	6.6	6.8	6.9	7.0
Lost workdays	64.5	68.8	71.6	79.1	105.7	134.2	138.6	153.7	166.1
Instruments and related products:									
Total cases	5.2	5.4	5.2	5.3	5.8	6.1	5.6	5.9	6.0
Lost workday cases	2.1	2.2	2.2	2.3	2.4	2.6	2.5	2.7	2.7
Lost workdays	35.6	37.5	37.9	42.2	43.9	51.5	55.4	57.8	64.4
Miscellaneous manufacturing industries:									
Total cases	9.9	10.5	9.7	10.2	10.7	11.3	11.1	11.3	11.3
Lost workday cases	4.0	4.3	4.2	4.3	4.6	5.1	5.1	5.1	5.1
Lost workdays	66.3	70.2	73.2	70.9	81.5	91.0	97.6	113.1	104.0
Nondurable goods:									
Total cases	9.6	9.6	9.6	10.0	11.1	11.4	11.6	11.7	11.5

See footnotes at end of table.

51. Continued— Occupational injury and illness incidence rates by industry,¹ United States

Industry and type of case ²	Incidence rates per 100 full-time workers ³								
	1983	1984	1985	1986	1987	1988	1989 ¹	1990	1991
Total workday cases	4.3	4.4	4.4	4.6	5.1	5.4	5.5	5.6	5.5
Total workdays	73.6	74.9	77.6	82.3	93.5	101.7	107.8	116.9	119.7
Food and kindred products:									
Total cases	16.5	16.7	16.7	16.5	17.7	18.5	18.5	20.0	19.5
Lost workday cases	7.9	8.1	8.1	8.0	8.6	9.2	9.3	9.9	9.9
Lost workdays	131.2	131.6	138.0	137.8	153.7	169.7	174.7	202.6	207.2
Tobacco products:									
Total cases	6.5	7.7	7.3	6.7	8.6	9.3	8.7	7.7	6.4
Lost workday cases	3.0	3.2	3.0	2.5	2.5	2.9	3.4	3.2	2.8
Lost workdays	42.8	51.7	51.7	45.6	46.4	53.0	64.2	62.3	52.0
Textile mill products:									
Total cases	7.4	8.0	7.5	7.8	9.0	9.6	10.3	9.6	10.0
Lost workday cases	2.8	3.0	3.0	3.1	3.6	4.0	4.2	4.0	4.4
Lost workdays	51.4	54.0	57.4	59.3	65.9	78.8	81.4	85.1	88.3
Apparel and other textile products:									
Total cases	6.4	6.7	6.7	6.7	7.4	8.1	8.6	8.8	9.2
Lost workday cases	2.4	2.5	2.6	2.7	3.1	3.5	3.8	3.9	4.2
Lost workdays	40.6	40.9	44.1	49.4	59.5	68.2	80.5	92.1	99.9
Paper and allied products:									
Total cases	10.0	10.4	10.2	10.5	12.8	13.1	12.7	12.1	11.2
Lost workday cases	4.5	4.7	4.7	4.7	5.8	5.9	5.8	5.5	5.0
Lost workdays	90.3	93.8	94.6	99.5	122.3	124.3	132.9	124.8	122.7
Printing and publishing:									
Total cases	6.6	6.5	6.3	6.5	6.7	6.6	6.9	6.9	6.7
Lost workday cases	2.9	2.9	2.9	2.9	3.1	3.2	3.3	3.3	3.2
Lost workdays	44.6	46.0	49.2	50.8	55.1	59.8	63.8	69.8	74.5
Chemicals and allied products:									
Total cases	5.5	5.3	5.1	6.3	7.0	7.0	7.0	6.5	6.4
Lost workday cases	2.5	2.4	2.3	2.7	3.1	3.3	3.2	3.1	3.1
Lost workdays	42.3	40.8	38.8	49.4	58.8	59.0	63.4	61.6	62.4
Petroleum and coal products:									
Total cases	5.5	5.1	5.1	7.1	7.3	7.0	6.6	6.6	6.2
Lost workday cases	2.4	2.4	2.4	3.2	3.1	3.2	3.3	3.1	2.9
Lost workdays	46.8	53.5	49.9	67.5	65.9	68.4	68.1	77.3	68.2
Rubber and miscellaneous plastics products:									
Total cases	13.0	13.6	13.4	14.0	15.9	16.3	16.2	16.2	15.1
Lost workday cases	6.2	6.4	6.3	6.6	7.6	8.1	8.0	7.8	7.2
Lost workdays	101.4	104.3	107.4	118.2	130.8	142.9	147.2	151.3	150.9
Leather and leather products:									
Total cases	10.0	10.5	10.3	10.5	12.4	11.4	13.6	12.1	12.5
Lost workday cases	4.4	4.7	4.6	4.8	5.8	5.6	6.5	5.9	5.9
Lost workdays	87.3	94.4	88.3	83.4	114.5	128.2	130.4	152.3	140.8
Transportation and public utilities									
Total cases	8.2	8.8	8.6	8.2	8.4	8.9	9.2	9.6	9.3
Lost workday cases	4.7	5.2	5.0	4.8	4.9	5.1	5.3	5.5	5.4
Lost workdays	94.9	105.1	107.1	102.1	108.1	118.6	121.5	134.1	140.0
Wholesale and retail trade									
Total cases	7.2	7.4	7.4	7.7	7.7	7.8	8.0	7.9	7.6
Lost workday cases	3.1	3.3	3.2	3.3	3.4	3.5	3.6	3.5	3.4
Lost workdays	47.8	50.5	50.7	54.0	56.1	60.9	63.5	65.6	72.0
Wholesale trade:									
Total cases	7.0	7.2	7.2	7.2	7.4	7.6	7.7	7.4	7.2
Lost workday cases	3.2	3.5	3.5	3.6	3.7	3.8	4.0	3.7	3.7
Lost workdays	50.6	55.5	59.8	62.5	64.0	69.2	71.9	71.5	79.2
Retail trade:									
Total cases	7.3	7.5	7.5	7.8	7.8	7.9	8.1	8.1	7.7
Lost workday cases	3.0	3.2	3.1	3.2	3.3	3.4	3.4	3.4	3.3
Lost workdays	46.7	48.4	47.0	50.5	52.9	57.6	60.0	63.2	69.1
Finance, insurance, and real estate									
Total cases	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.4	2.4
Lost workday cases .....	.9	.9	.9	.9	.9	.9	.9	1.1	1.1
Lost workdays	12.8	13.6	15.4	17.1	14.3	17.2	17.6	27.3	24.1
Services									
Total cases	5.1	5.2	5.4	5.3	5.5	5.4	5.5	6.0	6.2
Lost workday cases	2.4	2.5	2.6	2.5	2.7	2.6	2.7	2.8	2.8
Lost workdays	37.0	41.1	45.4	43.0	45.8	47.7	51.2	56.4	60.0

¹ Data for 1989 and subsequent years are based on the *Standard Industrial Classification Manual*, 1987 Edition. For this reason, they are not strictly comparable with data for the years 1982-88, which were based on the *Standard Industrial Classification Manual*, 1972 Edition, 1977 Supplement.

² Total cases include fatalities.

³ The incidence rates represent the number of injuries and illnesses or lost workdays per 100 full-time workers and were calculated as:

(N/EH) X 200,000, where:

N = number of injuries and illnesses or lost workdays.

EH = total hours worked by all employees during calendar year.

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year.)

⁴ Excludes farms with fewer than 11 employees since 1976.

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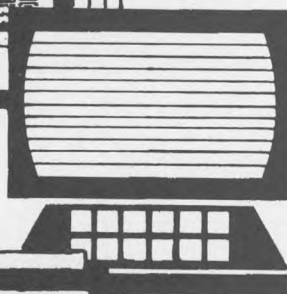
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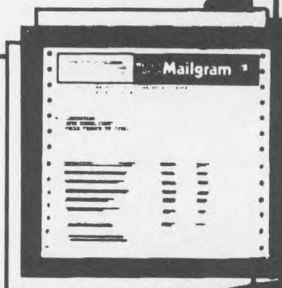
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